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THE OÖLOGIST,

FOR THE STUDENT OF

BIRDS, THEIR NESTS AND EGGS.

VOLUME XIX.

ALBION, N. Y.
FRANK H. LATTIN, M. D., PUBLISHER,
1902.

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1902.

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THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMY.

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195 " " " " Dec. "

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THE OÖLOGIST.

VOL. XIX. NO. 1.

ALBION, N. Y., JANUARY, 1902.

WHOLE NO. 184

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A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and Items of Interest to the student of Birds, their Nests and Eggs, solicited from all.

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A Novice's Note-Book. *

Feb. 22, 1881. Saw two Robins in town, the first of the season. They were singing in the top of a maple tree. Morning warm and bright.

Feb. 23. Cold and frozen up, Elev-

en Geese (Canada) flew over, rather high, going northward, in the morning.

Feb. 24. Evening clear and warm. Three Geese flew over, going southward, rather low

Feb. 25. Morning warm and bright.

* Accompanying "A Novice's Note-book" was a personal letter from the writer, Prof. P. M. Silloway, of Lewiston, Mont., which we deem of sufficient interest and value to print in full:

"In looking over my old note-books, I find that my observations began with the spring of 1881, at which time I was not eighteen years old. I have thought that some of your readers may be interested in a 'Novice's Note-book;' not that the notes are of great value now, but as expressions of a boyish longing to come in touch with the great avian family. As I remember now, my only work on identification was 'Tenney's Manual of Zoology;' however, I had access to the American Cyclopaedia, through the kindness of an elderly friend, and I found it extremely helpful. If you think it worth while, I shall be glad to send you these notes, copying them just as they are written in my inexperienced style, mistakes in identification being subject to my own comment. Readers of today should remember that the boy of twenty years ago did not have access to 'Davie's Nests and Eggs,' and other valuable helps; we older oölogists just 'grewed up,' and our notes of those primitive days show many signs of immaturity. But we grew, slowly though it may be, and I trust that if the publication of these notes continues, they will finally show evidences of more mature training in observation and expression.

"The field of my earliest ornithological observations was centered at Virden, Ill., near the northern line of Macoupin county. About two miles north of the town, ran a little creek, well wooded along its course until the timber was destroyed by the advance of civilization. This creek is called Sugar Creek, and figures in the notes as 'the creek' or 'Sugar Creek.' Northwest of the town, distant about a mile and a half, was a large reservoir constructed by a railroad entering the town, which is frequently mentioned in the notes as 'the pond,' or 'Crane's pond.' Otherwise the vicinity of the town is gently rolling, cultivated prairie. I ought to state that the creek and woods mentioned are in the southern end of Sangamon county.

"Now, friend Lattin, you will understand that my only motive in sending you these notes is the thought that they may be helpful to some reader of the Oölogist. I believe that our notes ought to be aired. These form the record of an oölogical experience which has been pleasant to the writer, and which I trust has been not altogether unhelpful to kindred minds. Caution your readers that the notes are not always reliable because of boyish inexperience; but the bushel of chaff may contain some grains of good."

Saw several Robins flying about chirping and singing. Also heard the soft, pleasing twitter of a Bluebird, and saw several specimens during the day, the first of the year. About six o'clock in the evening, a flock of twenty Geese went over, flying rather low, northward,

Feb. 26. Very bright, warm, and pleasant. A flock of about fifty Geese flew over in the morning, northward. At noon a Snipe (Killdeer) was heard, flying about overhead. In the afternoon saw the first Meadowlark, sitting on the ground in a pasture. Also saw a Kingfisher along the creek. Flocks of Ducks on the creek. Shot a Green-winged Teal.

March 2. About one hundred Geese flew over, northward, at sunset, flying within easy gunshot. Robins, Bluebirds and Meadowlarks singing all day.

March 3. Cold and snowy. A flock of Ducks flew over, going southward, about sunset, flying high.

March 6. Warm and pleasant. Large flock of Geese went over about noon, southward, flying high.

March 7. Warm and bright. Began to snow about 4 p. m. At 5 p. m., a very large flock of Geese went over, northward, flying low in two V's, one following the other.

March 8. Saw the first Butcher-bird (Loggerhead Shrike,) perched on telegraph wire near a pond. Several flocks of Geese flew over.

March 10. A flock of about twenty Geese went northward at noon, flying rather high. Blackbirds (Bronzed Grackle) have been here about four days, having arrived March 6. Woods full of Red-headed Woodpeckers. Bluebirds and Robins plentiful.

March 11. Past two days warm and pleasant. Tcday a cold rain brought in Ducks by thousands, (not actual count. P. M. S.) They were flying all day, and at almost any time two or three flocks were in sight. Flock after

flock passed over all day long. Several Jack Snipe (not further identified P. M. S.) were seen flying about. Saw two Squirrels running about in the woods.

March 14. Saw two Turtle (Mourning) Doves, the first of the season.

March 15. Red-winged Blackbirds appeared in the swamps. Cedar birds seen flying about in flocks of eight to twenty. They fly from one small tree to another, alighting very closely together. They are only visitors, I think, driven south by the extremely cold weather. They are the first I ever saw.

April 1. Snipe (not further known, but probably Killdeer. P. M. S.) and Plover (not further identified) appeared.

April 2. Found a Crow's nest in a large maple grove north of town, containing three eggs, and another containing two eggs. (Notice the full data. P. M. S.) The birds were evidently not through laying, (Very evident, indeed!) The egg is about an inch and a quarter long, color varying from light blue to dark green, spotted and blotched with dark brown, thickest at the larger end. The general color, however, is dark green, the lighter ones being the exception. The Crows made no noise whatever while I was examining the nests, but kept out of sight.

April 3. First House Wren.

April 5. Found a Crow's nest containing four eggs, which I believe is the most they ever lay. (A piece of snap judgment, based on an experience of three nests examined! Novices take warning. P. M. S.) This nest was in a tall cottonwood near a pond. (That data grows fuller!) Also saw the first Brown Thrush (Thrasher.) It was perched on a telegraph wire near the pond.

April 10. Swallows first appeared. (Species not mentioned.)

April 15. Pied-billed Grebe on the pond.

April 18. Four Pied-billed Grebe on the pond.

April 20 Robins, Blackbirds (Bronzed Grackle), and Brown Thrushes beginning to build their nests.

April 24 Saw the first Catbird of the season. Also the first Baltimore Oriole. The woods are full of the regular summer birds.

April 25. Observed a Scarlet Tanager, the first one I ever saw in this vicinity. It is a very beautiful bird.

April 27. Saw a pair of Kingbirds, or "Bee Martins," the first of the season. I think they travel in solitary pairs. (It is likely that this observation will hold in the majority of instances. P. M. S.)

April 28. A Robin's nest, which was commenced on the 20 h. was finished and ready for use by the 25th. To-day the first egg was laid. Also found a Brown Thrush's nest with one egg already laid. Wishing to try an experiment, I put the Thrush's egg in place of the Robin's egg, but the Robins deserted the nest.

April 29. Saw a flock of Cedar birds flying about this morning, the last day I noted them (added later.) Also saw a Ground Robin, or Towhee. Also a Green Heron along the creek.

April 30. Found an egg of a Bluebird in a nest in a hollow post along the railroad. (Another example of full data, P. M. S.)

May 3. Took two eggs of Bluebird from a nest in another hollow post along the railroad. There were five eggs in the nest. The birds kept on incubating, and I had the pleasure of knowing that the remaining eggs hatched out and the young went forth safely.

May 9. Bobolinks appeared in a low pasture south of town, and remained around for about two weeks. The pasture is low and wet, having a ditch running across it. The Bobolink sits upon the ground or on a tuft of grass, and

utters its jingling song, and when alarmed it flies up, singing as it flies.

May 18. A boy in town found a Mocking Bird's nest in a hedge, containing four eggs. The egg is a dark grayish color, spotted with brown. I have seen several pairs flying about, but I did not know that they bred around here.

May 24. Camped out on Sugar creek. We found a nest of the Jaybird (Blue Jay,) containing six eggs, with embryos nearly developed.

About dark the Whip-poor-wills began to utter their notes, which sound nearly like those of the Quail (Bobwhite,) repeated rapidly half a dozen or more times. They kept it up until almost midnight, when they ceased until about an hour before dawn; then they began again, and kept it up until daylight.

Found a Wood Thrush's nest, containing two eggs of its own and one of the Cowbird's, which is a very pale grayish blue, spotted with brown. The eggs were warm when found, and an unknown bird was sitting upon the nest. (Identification, sure! P. M. S.) Robins and Brown Thrashers have hatched and reared one brood, and some of them are preparing to rear another brood.

Field Notes From Manitoba.

NESTING OF THE LOON.

It was while reading the notes on the Loon, in John Macoun's catalogue of Canadian birds, Part I, that I decided to write a few notes on this species and present them to the readers of the OÖLOGIST. This bird is fairly numerous in my locality, and although I have not had as good opportunities to observe it in its native haunts, as the species I last wrote about, I would like to contribute a few notes regarding its habits distribution and identification.

It is only during the last three seasons

that I have become acquainted with these birds, except as a few specimens shot by hunters, and passing through my hands as a taxidermist, have come under my notice. However, in the spring of 1898 I had a visit from a Mr. A. who was interested in oology and while speaking of the birds found in our locality, he chanced to mention the Loon and informed me that it breeds on a lake about $5\frac{1}{2}$ miles from his home, and that he had taken sets of their eggs. Accordingly, the first chance I had, which was in the spring of 1900, on the 19th of June, in company with a friend, I hitched up my horse, loaded my buggy with portable boat and boxes for eggs and after a long and dusty drive over sandhills in the hot sun, arrived at Mr. A's place between 10 and 11 in the evening, hungry and tired but delighted with the prospects for the next day as the country was rough and appeared to be a paradise for birds. After supper, and a look at Mr. A's collection, we laid our plans for the morrow and retired to rest to dream of loons nests like hay stacks and eggs so large we could not carry them.

As the fleas are abundant in this sandy district, sleep was short, and ere the hands of the clock pointed to the hour of three, I was up and ready to take a look at the country in the better light of day.

We got an early breakfast, and while the morning was yet cool, started off for the lake where for eight successive years he had known the loons to breed, and where he had taken a number of sets of their eggs. We passed numerous small ponds on the way where Red-winged and Yellow-headed Blackbirds were abundant; Killdeer, Blue-winged Teal, Ring-necked, Pintail, Mallard and other Ducks were plentiful, and Mr. A. showed us the place where a year ago in June he had found a nest containing broken shells of the Canada Goose. And about 9:30 reached Loon

lake; the lake was a long shaped sheet of water of good size, sheltered on the east by willows, while on the two ends and the west a low grassy shore intervened the water's edge and the timber line. We drove round to the east side where the bottom of the lake was gravelly and firm, and as we drove through the opening in the trees that gives access to the lake the male bird swimming on the water caught our eyes and we prepared to launch our boat. While putting together our boat I cast my eye over the lake and near the south end I could see the female Loon sitting on what in the distance appeared to be a musk rat house of small size, well out in the water. Mr. A and I, as soon as we had our boat up, launched it upon the lake while my companion took gun and rifle and hid himself in the rushes at the north end of the lake to see if he could secure one of the birds for a specimen. A and I soon reached the nest, and when we were about one hundred yards away, the female slipped off into the water not to re-appear until she came to the surface at the other end of the lake in company with her mate. As we paddled up to the nest we could see the large olive green eggs at quite a distance, and I soon drew the boat along side and took the eggs. There were two, which is the number in all the sets found by Mr. A and I, and recorded by most collectors. They varied in color, the ground color of the one being browner than in the other; the spots of dark brownish black were scattered all over the egg quite evenly, in fact, they were a typical set of Loon's eggs. The nest was merely a pile of bog moss brought up from the bottom by the birds and piled up until about nine inches above water level; was about two feet three inches in diameter at the base and about 1 foot at the top, and the water about two feet deep. Mr. A. tells me that all the nests taken by him on this lake have been the same pile of

moss and all the eggs show the same type of color, one showing the green and one the brown shade of ground color. We spent some time on the lake looking for nests of Black Tern, Yellow headed and Red-winged Black-birds and Bitterns with but little success, and then returned to the shore for lunch. Before starting lunch I thought I would see if my horse was safe, and walked around to the other side of the willows where we had left him, only to find him gone. I gave the alarm, and leaving lunch for the present we started in pursuit, but failed, after over an hours search, to find him. Mr. A followed our road back to his house while S and I searched the brush in the vicinity of the lake. When A returned he reported finding tracks of a horse over the sand hills, so we walked back to his home. I then took the pony and rode round through the brush to look for my lost steed. While A and S took another horse and went for the rig, boat, etc. I finished the day and returned to supper without success, and after supper started out on a 25 mile walk home under the impression that "Billy," who is a great lover of his stall, might have tracked for home. I need hardly dwell on the long weary walk, making at least 40 miles that day, or the glorious exhibition of natural illumination I witnessed as I crossed the sand hills and watched the fire-flies performing their midnight evolutions, but the sun was streaking the eastern sky ere I arrived home, to find that Billy had not returned. I rested the next day, as I was pretty well used up and the following day Mr. A and S came to hand with the outfit with one of Mr. A's horses and reported that Billy had not turned up yet. After unloading, and dinner, I took a saddle and returned with Mr. A, but it was Sunday noon before old Billy having broken his hobble, returned to A's place and was joyfully admitted through the pasture field bars and put

in the stable again. His fetlocks were badly cut by the hobble and I had to walk him all the way home, thus ending my collecting season of 1900.

On the 25th of July, Billy having recovered from the effects of his last escapade, and I having a business trip to make to Rothwell, I thought I would take the boat along and pay another friendly visit to Mr. and Mrs. Loon as I thought in all probability there would be another set of eggs by this time, therefore started off about 3:30 and arrived at Mr. A's about nine; as I was tired with my long drive in the hot sun I went to bed. Before entering, Mr. A told me how he had shot three young of the Saw Whet Owl in a thick poplar bluff about two miles from his place, which conclusively proves they breed with us.

On the following morning we visited Loon lake again and saw the Loons there. While we were getting the boat ready the Loons both took wing and left the lake. We searched the lake carefully, but found no sign of a nest except the one we had taken the set from on our former visit, and as our time was limited to a day, did not waste more time there. As we were taking the boat down we saw one of the Loons, likely the female, return, and went away leaving her swimming on the placid waters of the lake. It was noon now so we ate our lunch, and while eating, decided as we still had the half day to put in, we would go to another lake about two miles east, not as large, and in some places quite reedy. Like the Aborigines we had to find our own road, and drove through some brush and scrub, which to say the least, was a very poor highway. However, everything comes to him who waits, and at last we found ourselves at lake No. 2. This lake is very shallow in water but deep in mud, and these conditions were made more favorable by the dry season, we therefore had great

difficulty in launching the boat and had to carry some trees to make a temporary bridge to enable us to reach water deep enough to float our boat; however, like the bad boy, we got there all the same. This lake seems to be an ideal resort for water fowl, and lots of Ducks, Grebes, Sandpipers, Killdeers, etc., but the pair of Loons with their two half grown young were what we were most interested in. As soon as we pointed the head of the boat toward them they dove, and though we carefully searched the lake shore we saw nothing more of them. Neither could we find any sign of a nest. I shot a pair of Sandpipers and some Yellow Legs, and as the sun was getting pretty low, we started for home, reaching there at 12 p. m.

My experience with Loons in 1900 will be the subject of my next paper.

CHRIS. P. FORGE.

Carman, Man.

The Food Supply of the Meadowlark.

BY C. C. PURDUM.

Although belonging to the Oriole family the Meadowlark (*Sturnella magna*.) differs greatly in habits etc., from the bird of our first paper, *Icterus galbula*.

Perhaps the widest difference is noticed in the nesting habits. The Oriole building a pendulous, compact domicile, in the most inaccessible situation it can find, while the Meadowlark hides it's humble nest in or under some tuft of grass. Naturally we would expect the foods of these two birds to differ considerably, the Meadowlark seeking it's food on the ground, while the Oriole takes it's repast from the trees. Consequently there must be a marked difference in their food. For instance, while the Meadowlark eats grasshoppers and other ground insects, the Oriole feeds on the caterpillars and wasps

which live among the trees, shrubs and flowers.

Even during the portion of winter, when the ground is covered with snow, insects constitute the great bulk of the food for the Meadowlark. The larger number of these is grasshoppers, which are the scourge of the farmer, but which the Meadowlark carefully searches out and eats. There is probably no bird which is so great a grasshopper destroyer. It may seem a little strange that even during the period of winter when the ground is covered with snow, that the Meadowlark's food consists so largely of insects. As a matter of fact, however, examination of the stomachs of birds killed during this period show an average of 47 per cent. of all the food eaten to be insects, among which are caterpillars, spiders, grasshoppers, crickets, beetles of many species, wasps, bugs and myriapods.

In the laboratory investigation of the food of the Meadowlark, 238 were examined, collected from the District of Columbia, Canada, and 24 of the states, and the results obtained may be stated as follows:

Insect food, 71-1.

Vegetable food, 26 5.

Mineral matter, 1.8.

Excluding the mineral matter, which in no case can be considered as food, the record stands as follows:

Animal matter, 73.

Vegetable matter, 27.

During the month of March the Meadowlark finds enough insects to constitute 73 per cent. of it's diet, and this during a month when insects are not to be procured with the greatest ease.

During December and January the insects constitute but 39, and 24 per cent. respectively, but during August and September the diet is almost entirely insect; in fact during these three months, no vegetable food to speak of is consumed.

During the greater part of the year grasshoppers, crickets and locusts constitute the greater part of the food. Next in importance to grasshoppers come the beetles, and they constitute nearly eighteen per cent. of the entire food for the year.

The most important of these are the May beetles (*Scarabaeidae*), which are probably the most injurious of any. The average of these beetles for the year is 4 per cent. The snout beetles or weevils are of constant occurrence, but not in large numbers, averaging about 3 per cent. The principal varieties of these beetles are the extremely injurious curculios (*Curculionidae*), of which the plum curculio (*Conotrachelus nenuphar*), is perhaps best known and the scarred snout beetle (*Otiorhynchidae*.)

The carabid or predaceous ground beetles are eaten, but the quantity is small in comparison to that of the other varieties, and are probably taken only when the others can not be procured with ease. Bugs (*Hemiptera*) are found in the stomachs throughout the year, and average about four per cent.

□ The stink bugs (*Pentatomidae*) constitute the greater number, and as these bugs crawl over ripe fruit and impart a very disagreeable taste to it, a great deal of good is done by their destruction.

The larvae of butterflies and moths, and the larvae of beetles are constantly met with.

Ants are also a constant though relatively small element of diet. Wasps, spiders and thousand legs are also eaten quite freely, and among the occasional side dishes may be mentioned, flies, earwigs, cattle-ticks, snails, sow bugs, and minute crustaceans and batrachians, but these last are only rarely taken, and are not a favorite.

Of the total 27 per cent. of vegetable food, grain constitutes a little more than one-half, and in some localities the bird

has been accused of pulling sprouted grain, but such reports are few.

Seeds of plants are relished and were found in all the stomachs which were examined.

The fact that the grain diet is only temporary, and at that only composed of about one half cultivated grain, while the rest is composed of wild or cultivated seeds, surely gives *Sturnella magna* a clear title to the honor of being a very beneficial bird.

The following table will show at a glance the economical standing in regard to agriculture, of each of the birds which we have considered, and we must all agree that our sprightly little friend, *Troglodytes aedon* carries off the palm.

Table showing the number of stomachs examined, and the per cent. of the food contents of the birds considered in this and the preceding papers:

	Meadow Lark; (1010.)	Cat Bird.	Brown Thrasher.	House Wren.	
Number of stomachs.....	86	238	192	121	52
Per cent. of animal food:					
Ants.....	2	3	10	5	2
Caterpillars	29	8	5	8	16
Beetles.....	21	18	24	28	22
Grasshoppers	3	29	4	12	25
Bugs	5	4	2	2	12
Spiders and thousand legs...	10	5	4	7	14
Miscellaneous animal food...	2	5	5	1	5
Total animal.....	72	72	44	63	98
Per cent. vegetable food:					
Cultivated fruit's.....	2	0	18	8	...
Wild fruits and seeds	9	12	35	24	...
Grain.....	...	11	...	3	...
Miscellaneous vegetable f'd	1	3	2	...	1
Total vegetable food.....	12	26	55	35	1
Mixed mineral matter, not f'd which can be eliminated	16	2	1	2	1
Total contents.....	100	100	100	100	100

Birds Observed in a Single Day.

Birds seen and heard on a trip from Grand Rapids, Kent County, to Jennisonville, Ottawa County, Mich., by team, and a ramble in the woods and fields. All kinds of Territory,—Hard wood, pinery, fields, orchards and lowlands.

Time of trip—4:30 a. m. to 8 p. m., May 8, '79.

Distance covered, there and return, and walks—about 32 miles.

Weather perfect. Birds observed, 88 species.

Note.—This is the largest number of species of birds that I have recorded in a single day's trip, and more than I have noted in a month of observations in many months in recent years.

Species found breeding, marked *

American Bittern.
Great Blue Heron, *
Woodcock,
Field Plover,
Spotted Sandpiper,
Killdeer Plover, *
Bob White.
Ruffed Grouse,
Wild Pigeon,
Mourning Dove,
Marsh Hawk,
Cooper's Hawk,
Red-tailed Hawk.
Red-shouldered Hawk,
Sparrow Hawk,
Barred Owl,
Kingfisher, *
Hairy Woodpecker,
Red-head Woodpecker, *
Gold-wing Woodpecker,
Nighthawk,
Chimney Swift,
Humming Bird,
Kingbird,
Great-crested Flycatcher,
Phebe, *
Wood Pewee,
Least Flycatcher,
Prairie Horned Lark,

Blue Jay, *
Crow, *
Bobolink,
Cowbird,
Red-wing Blackbird, *
Meadow Lark,
Orchard Oriole,
Baltimore Oriole,
Bronzed Grackle, *
Goldfinch,
Grass Finch,
White-crowned Sparrow,
White-throated Sparrow,
Chipping Sparrow, *
Field Sparrow,
Song Sparrow,
Towhee, *
Rose-breasted Grosbeak,
Indigo Bunting,
Scarlet Tanager.
Eave Swallow, *
Barn Swallow, *
Bank Swallow,
Blue-back Swallow,
White-rumped Shrike,
Red-eyed Vireo,
Warbling Vireo,
Yellow-throated Vireo,
Solitary Vireo,
Black and White Creeper,
Golden-wing Warbler,
Nashville Warbler,
Blue Yellow-back Warbler,
Yellow Warbler,
Black-throated Blue Warbler,
Chestnut-sided Warbler,
Blackburnian Warbler,
Black-throated Green Warbler,
Prairie Warbler,
Oven Bird.
Large-billed Water Thrush,
Mourning Warbler,
Maryland Yellow-throat,
Hooded Warbler,
Canadian Warbler.
American Redstart,
Catbird, *
Brown Thrush,
House Wren,
Brown Creeper,
White-breasted Nuthatch,
Black-capped Chickadee.
Blue-Gray Gnatcatcher,
Wood Thrush,
Wilson's Thrush,
Swainson's Thrush,
Hermit Thrush,
Robin, *
Bluebird.

M. GIBBS, Kalamazoo, Mich.

MID-WINTER BARGAINS.

I am closing out a large assortment of very desirable material at prices that will appeal to any intelligent buyer. Kindly look over the entire list.

BULK MINERALS.

No less than 100 pounds sent by freight. If wanted by Express any quantity under this amount can be ordered. Prices net.

Lbs.	Per Pound.
30 Alunite.....	05
18 Arsenopyrite.....	06
20 Biotite.....	05
20 Beryl, green.....	05
25 Coquina (shell rock).....	05
50 Calcite Crystals.....	05
100 Claystones, each.....	01
12 Calc Spar.....	04
5 Dolomite.....	05
5 Diabase.....	05
20 Enstatite.....	03
50 Feldspar, pink.....	04
20 Fuller's Earth.....	03
15 Fossil Coral.....	03
10 Geodes, pieces.....	05
25 Garnet Granite.....	03
20 Gypsum.....	04
7 Galena.....	04
7 Granite.....	04
10 Mica Schist.....	03
10 Mica, white.....	05
20 Mica, curved.....	05
20 Limonite.....	04
5 Magnesite.....	06
50 Onyx (sawed in slices).....	08
50 Onyx (massive).....	05
11 Pyrrhotite.....	06
18 Pyrolusite.....	06
20 Petrified Wood.....	10
20 Quartz.....	03
50 Quartz, rose.....	04
15 Quartz, smoky.....	03
20 Quartz, milky.....	03
30 Sphalerite in Dolomite.....	05
9 Silver Ore.....	10
10 Serpentine.....	06
14 Tin Ore.....	05
10 Tourmaline, brown.....	06
20 Wernerite.....	04
22 Williamsite.....	04
15 Marmolite in Enstatite.....	03

We have a new bargain list of minerals if you wish to buy by the specimen. Send for it.

Shells and Curios.

Fulgar shells per dozen.....	35
Large Tulip shells, ".....	35
Small Tulips, ".....	20
Bleeding Teeth, quart.....	30
Money Cowries, ".....	35
Ring-top ".....	35
Black-eye Susans, ".....	50
Sand Dollars, dozen.....	30
Mica Snow, per 5 lbs.....	50
Scaphites nodosus fossil per dozen, small.....	25
Larger and largest 3c and.....	75
Chautauqua Shell Collections, usually retail at \$2.50, now offered at.....	75
150 lbs. of Bahama Coral, from small chunks to fine large heads weighing 15 to 25 lbs., per pound.....	10
One Botany Plant Press, fine.....	82
Marvelous Collection of 44 Curios, all in box, only.....	75
Gem Collection of 12 cut and polished gem stones in box, named.....	50
Showy Mineral Collection of 24 small but showy minerals.....	50
Special Mineral Collection of 50 Minerals, all different.....	75

The above four collections for only \$2 net. A bargain. We offer any of the above four collections by the dozen or hundred to teachers or agents who wish to sell them again.

We have some very choice butterflies in plaster cases, such as the gorgeous blues and yellows, at \$2 and \$2.50 each. The rare leaf butterfly, at \$3.50 and many others.

Just received a fine lot of small mammals from Wisconsin. List to those who wish to buy. Also some flat mammal skins of possum, skunk and the like at 50c to 75c each to close out.

Who wants any of the following fine sets? Must order quick or they will be gone:

Booby Gannet, 1-2, \$1; Harris Hawk, 1-4, 65c; Black-neck Stilt, 1-4, 50c; White-wing Dove, 1-2, 10c; Purple Gallinule, 1-6, 70c; Chestnut-bellied Scaled Quail, 1-8, \$1.25; St. Domingo Grebe, 1-4, 50c; White Ibis, 1-3, 45c; Audubons Shearwater, 1-1, 50c; Texan Quail, 1-10, 60c. Many other nice things in this line.

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We have a fine stock of these gorgeous Purple Sea Plumes that wave in the ocean depths, growing on the edges of the coral rock. They run two and a half feet to five feet long, with from ten to fifty branches. Smaller sizes by the dozen spec., fine to decorate a room, \$1. A dozen of the largest sizes for \$2. They will go quick at these prices. Order a dozen and sell what you do not want to some of your friends. They list in the dealers' catalogues at one to two dollars each.

Invertebrates.

Our stock of invertebrates is very large, both wet and dry. We are prepared to furnish the small collector a fine assortment at one to five dollars. The larger collector, who specializes certain branches, lots ranging from twenty to two hundred dollars, or the College Museum. We have a particularly large lot of specimens in formalin from the Atlantic, about thirty kinds, representing seven orders and will sell by the single specimen in vial with printed label at an average price of ten cents each for an assortment, or will sell by the dozen for class study. Let us know your wants and save about 50 per cent. from what dealers usually charge for these beautiful and interesting ocean curios, most of which can only be got by deep sea dredging.

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This page contains just an inkling of our immense stock. Your correspondence solicited when we will be glad to tell you more about it.

WALTER F. WEBB,

416 Grand Ave., Rochester, N. Y.

Do You Know

how fascinating English history really is? That England during the past thousand years, has given to our literature more heroes and heroines than all the rest of the world and ages? What do you know of the private and personal lives of her queens, who as well as being stately sovereigns, with passions of love and hate, were living, palpitating women?

Do you know of that king and queen who stood bare-footed, and "all naked from their waists upward," in the great hall of Westminster? Or what plumber's dog licked the blood of a king? Or why Henry VII hanged his four English mastiffs as traitors? Or what king apologized for taking so long to die? Or why Marlborough and his duchess were disgraced?

Do you know the story of Thomas a Becket and the Emir's daughter? Of fair Rosamond Clifford's bower in the labyrinth at Woodstock, and the telltale silken thread on Henry's golden spur that led to her becoming a nun? Of Richard II and the fatal trap-door of Vidomar? Of the dreadful warning that hung over the bed of Isabella of Angouleme? Of the queen who was discovered in London, disguised as a cook-maid?

Do you know how the mere fact that the Duchess of Marlborough putting on, by mistake, the queen's gloves, changed, as Voltaire says, the destinies of Europe? Or why the great Elizabeth and her prime minister had to deal secretly with Catherine de' Medici's tailors? Or what that which passed between "Nan" Boleyn and King Hal beneath the yew-tree in the cloistered shade of Sopewell nunnery, meant to Wolsey?

Those who are interested may have specimen pages of a work that will show how English history may be had in quite a different way from that presented by Hume, or Rapin, or Macaulay, or Guizot, or Hallam, or Froude.

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GEORGE BARRIE & SON, PUBLISHERS,

1313 WALNUT STREET,

PHILADELPHIA.

AGENTS WANTED—LIBERAL COMMISSION.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XIX. NO. 2. ALBION, N. Y., FEBRUARY, 1902. WHOLE No. 185

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.
Strictly First-class specimens will be accepted in payment at one-third list rates.

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Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

No. 185 your subscription expires with this issue
190 " " " " " June, 1902
195 " " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This Feb. OÖLOGIST was issued Feb. 1st. The March issue will be printed on March 1st. Copy intended for that issue must be forwarded by return mail.

WANTED.—Cheap for cash, Navajo blankets, Indian baskets, pottery and relics, bird points, fossil teeth, shark's jaws, etc. JAMES O. DUNN, 592 E. 43rd St., Chicago.

YOU WANT a copy of Wilson Bulletin, No. 37. It contains "A Sectional Bird Census;" an annotated list of 62 species and 1,388 individuals summering in an area of one square mile; price 20 cents. Address F. L. BURNS, Berwyn, Pa.

EXCHANGE.—Collection coins, some rare "bogus" coins, '92 half dollars, second hand medical library for eggs in sets. H. L. WOOD, Groton, Conn.

AGENTS WANTED—To sell the Macy Mental Inhalors at 40 per cent. commission; fast seller. Send 10c for sample. M. HALLOCK, 175 East Ave., Rochester, N. Y.

TO EXCHANGE.—A few Porto Rican and Cuban bird skins for choice sets, with nests preferred, books, publications and possibly western skins. Lists exchanged. B. S. BOWDISH, 50 W. 98th St. New York City.

TO EXCHANGE.—A-1 sets of A. O. U. numbers 273, 289, 316, 387, 406, 409, 444, 477, 498, 501, 506, 511, 563, 593, 604, 610, 622, 651, 683, 703, 704, 705, 756. Can furnish sets of 477 and 703 in beautiful series showing varied color and markings. Want complete sets with full data. CHAS. E. STOCKARD, Washington, Mississippi.

TO EXCHANGE.—Some good U. S. and foreign stamps. Value, Scott's, 1900, about \$3.50, for an A-1 set, No. 337b. Write. JOHN G. TYLER, Clovis, Fresno Co., Calif.

100 Choice sea shells, 35c; Indian tomahawk, 35c; 5 different Indian relics, 35c; 5 choice old coins, 15c; 5 choice Canadian coins, 18c; price list, old coin 100 years old and 5 choice stamps for 10c. W. P. ARNOLD, Peacedale, R. I.

FOR SALE.—Vols. I, II, III, IV Osprey, \$4 25; Vols. II, III, IV Nidologist, \$2 25; No. 2, Vol. I, Vol. II, complete; Nos. 1 and 2. Vol. III, Michigan Ornithological Club Bulletin, 60 cents; complete file Natural Science News, 30 cents; nine numbers, Vol. XXX, Popular Science, 30 cents; Vol. II, Museum, 25 cents; odd numbers Nidologist and other ornithological papers. Postpaid at prices quoted. L. B. GILMORE, Route 2, Saegertown, Pa.

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DAVIE'S Nests and Eggs, 5th ed. and new yearly subscription to "The Condor," for \$2.25. I can quote you the best bargains in subscription offers ever known. I will duplicate any offer combination made by any reliable publisher or subscription agency. Write your wants. Lists free. BENJAMIN HOAG, Stephentown, New York.

WANTED.—To purchase relics, old firearms, antiques, fractional currency, curios, fossils, medals, collections of stamps, etc., etc., for my private collection. No postals answered. STEPHEN VAN RENSSELAER, JR., West Orange, N. J.

WANTED.—To hear from persons who can furnish game bird skins and game heads at reasonable prices. S. SILL, 307 Custer Ave., Youngstown, O.

FOR SALE OR EXCHANGE.—Strictly first class southern Birds' eggs in sets with full and accurate data. Am. Oystercatcher, Royal Tern, Willet, Wilson's Plover, Brown Pelican, Clapper Rail, Laughing Gull, Black Skimmer, Green Heron, Boat-tailed Grackle, Painted Bunting, Yellow-breasted Chat, Indigo Bunting, Very cheap or for A I sets and large, rare Singles. DR. M. T. CLECKLEY, Augusta, Ga.

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I HAVE a few 1901 Rare Coin Encyclopedias, 63 pages of half-tone prints, 250 pages in all, by the Numismatist people, which I am selling for 75c or coin catalogued at same original price \$1. Now's your chance. M. HALLOCK, 175 East Ave., Rochester, N. Y.

TO EXCHANGE.—A-1 sets Caracara, Black Vulture, Turkey Vulture, White-necked Raven, Black-necked Stilt, Bald Eagle, Swainson's Hawk, Krider's Hawk, White-tailed Hawk, Scaled Partridge for good sets. Will sell a few of the above eggs. Two Vols. Ank in fine condition to sell or trade. J. W. PRESTON, Baxter, Iowa.

BIRD'S EGGS WANTED.—In strictly first-class sets. Nests of small rare species desired with sets where possible. Will pay cash or exchange in books, magazines, tools, supplies, etc.; almost any article used by collectors or sportsmen can be supplied. Send lists. State your lowest cash price or what you desire in exchange and I will make offer. BENJAMIN HOAG, Stephentown, New York.

TO EXCHANGE.—For choice sets A-1 sets and skins of water and Raptorial bird's skins of 151, 169, 171a, 349, 375, 405 and many others. When writing send full list. All answered. C. M. WOODS, Alice, Texas County, Missouri.

YOUR ATTENTION.—Collectors is called to my new data blank and field note books just out, nicely bound in imitation marble back—100 datas in first, 200 l-aves in second. Write for sample sheets and prices. Satisfaction guaranteed. Get ready now for coming season. GEO W. MORSE, Box 230, Ashley, Ind. 185

I HAVE Fossils, sets of hawks, owls and other birds, eggs to exchange for good Indian relics, stamps, coins or other good sets of eggs. (184.) JASPER BROWN, Norway, Iowa.

MTD. BIRDS FOR SALE.—Golden Eagle \$8.00; Loons \$4.00; Snowy Owls \$3.00 to \$5.00; Arctic Horned Owl \$5.00; W. Great Horned Owl \$3.00; Sawwhets \$1.50; Sharp-tailed Grouse \$2.00; Ruffed \$1.50; Gray Ruffed Grouse \$2.50; Black-billed Cuckoos 75 cents; Snow birds 60 cents; Redpolls 50 cents; Pine Grosbeaks 75 cents; Evening do. 75 cents; small specimens prepaid by mail at prices quoted. Wolf skins for mounting or rugs, from \$3.50 to \$2.00. Eagle claws and feathers. Fresh skins of Northern birds for sale during winter months. CHRIS P. FORGE, Carman, Man.

WANTED.—Sets of 53, 74, 80, 119, 125, 139, 140. Can offer in exchange sets 191 2-4 1-5, 212 1-10 1-7, 214 3-10 2-12, 402 1-5, 494 2-5 1-6, 501 1-5 1-6, 622a 1-6, 725 4-6. All first-class with data. A. W. PLUMB, Rankin, Mich.

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I have several vols. of Pacific R. R. reports, geological surveys, geology of Ohio, pamphlets and natural history papers to exchange for similar works. I want choice skins of A. O. U. 74, 395, 452, 465, 506, 521, 522, 550, 552, 553, 595, 604, 639, 641, 645, 658, 671, 672, 675, 677, 679, 683, 684, 685, 686, 703, 718, 719, 731 and 757. Five thousand named and labeled Coleoptera to exchange at 3 cents each; also several hundred land and fresh water shells at 5 cents each. During Apl., May and June I will collect skins of our local birds and mammals. If you mean business, write; if not, save your stamps. W.E. SNYDER, Beaver Dam, Wis.

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WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrosities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

WANTED:—A number of sets each, 6, 27, 29, 58, 63, 64, 77, 80, 120a 122 137 139, 140, 144, 149, 160, 172, 183, 190, 214, 218 228, 261, 263 264, 273, 277, 277a, 289, 294 295, 300 309, 210, 318, 325, 326, 328, 329, 337, 337b, 339, 343. Any Hawks, Owls, Humming birds and Warblers and nests, nearly any sparrows, 364, 373, 387, 388, 390, 393, 394, 501, 509, 558, 601, 611, 614 619, 622a, 622b 624, 761, 751 and nests, at once. Collectors are requested to send full lists of these and other duplicates. Good exchange offered. D. WILBY, 27 Front St., West, Toronto, Ontario, Canada. 185

BIRD EGGS FOR EXCHANGE.—Fine series of Tricolored Blackbirds and others. Send list and receive mine. J. S. APPLETON, Simi, Ventura, Co., Cal.

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WANTED.—A copy of "Studer's Birds of North America." State condition of book and lowest cash price wanted. E. A. QUANTZ, Star, Alta, Canada.

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WANTED:—Eggs in original sets with data, strictly first class skins, books, or anything the collector can use. Can give excellent value in finely preserved Marine invertebrates, and some eggs. Write me at once as I shall close this stock out immediately. C. C. PURDUM, M. D., 128 Mineral Spring Ave., Pawtucket, R. I.

TO EXCHANGE.—A fine collection of confederate currency, old broken bank bills, etc.; also minerals and bird eggs to exchange for autographs, minerals or sea curios. F. O. NELSON, 516 S. 13th St., Boise, Idaho.

WANTED.—To buy collections of eggs for either immediate cash or exchange. Write what you have to offer. WALTER F. WEBB, 416 Grand Avenue, Rochester, N. Y.

WANTED TO EXCHANGE.—Bird eggs in sets. Send list and receive mine. Want old pistols, Indian relics, coins, stamps. JOHN J. PRICE, 1322 7th St., Des Moines, Iowa.

Mounted Birds.

In addition to those offered in December OÖLOGIST I now have Snowy Owl, fine \$4.98; Short-eared Owl, \$1.45; Am. Barn Owl, \$1.65; Kittiwake Gull, \$1.55; Scissor-tailed Flycatcher, in roseate plumage, wings spread, \$1.45; S. Am. Rose Hummer, in fancy case, \$1.98.

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I want the following to complete my files. State what you have and quote lowest cash price. Only accepted offers answered. Address,

K. B. MATHES,

154 Ellicott St., Buffalo, N. Y.

Audubon Magazine. Vol. I No. 3 (Apr. '87); Vol. II Nos. 2 and 8 (Mch. and Sept. '88).

Oregon Naturalist. Vol. III No. 10 (Oct. '96).

The Oologist Advertiser. Vol. I No. 1 (Aug. '90).

Bulletin of the Cooper Ornithological Club. Vol. I No. 3 (May-June '99).

Bulletin of the Michigan Ornithological Club. Vol. III No. 3 (July '99) to date.

The Nidologist. Vol. I Nos. 1, 2 (Sept.-Oct. '93) and 6 (Feb. '94).

The Osprey. Vol. I Nos. 2 and 4 (Oct. and Dec. '96); Vol. III No. 8 (April '99).

The Taxidermist. Vol. I Nos. 5 (Nov. '91) and 11 (May '92).

Oregon Naturalist. Vol. III No. 10 (Oct. '96).

The Iowa Ornithologist. Vol. II Nos. 2 and 4 ('96); Vol. III Nos. 2 and 3 ('97).

The Ornithologist and Oologist. Semi-Annual. Vol. I No. 1 (Jan. '89).

The Journal of the Wilson Ornithological Chapter of the Agassiz Association. Vol. I No. 2 ('93).

Random Notes on Natural History. Vol. III Nos. 6, 7 and 11. (June, July, Nov. '86).

The Oologist. July-Aug. '86, Jan. '87, Aug-Sept. '88. Dec. '97.

New Year's Egg List.

For four years I have been unable to secure any sets of White Ibis or any genuine sets of Am. Egret. I am now able to offer a few freshly collected first-class sets as follows:

White Ibis, beautifully marked sets of 3, 45c; 3 sets showing different types, \$1.20; Am. Egret, unfaded eggs, the real thing, 3 at 45c; Loon, 2 at \$1.25; Western Horned Owl, 2; Am. Oystercatcher, 2; Turkey Vulture, 2; Black Vulture, 2; at 70c per set; White-throated Sparrow, 4; Hooded Warbler, 3; at 50c per set; Olive-backed Thrush, 3; Sharp-tailed Sparrow, 4; Western Flycatcher, 4; Parkman's Wren, 7; Calif. Bush-tit, 7; Am. Eared Grebe, 7; at 40c per set; Nighthawk, 2; Black-billed Magpie, 6; at 30c per set; Alder Flycatcher, 4; Wilson's Thrush, 4; at 25c per set; Wilson's Thrush, 3; White-eyed Vireo, 3; Brewer's Blackbird, 7; Green Heron, 4; at 20c per set; Painted Bunting, 3 and Dwarf Cowbird, at 15c; Bank Swallow, 5; Wood Thrush, 4 and Cowbird, 10c per set; small sets at reduced prices: Scott's Oriole, 2 at 75c; Rusty Grackle, 2 at 50c; White-breasted Nuthatch, 3 at 30c; Canon Towhee, 2; Gt. Blue Heron, 2; at 25c per set; Am. Eared Grebe, 4 at 20c; Calif. Thrasher, 2 at 15c; Chimney Swift, 2; Black-crown Night Heron, 2; Least Flycatcher, 2; Long-billed Marsh Wren, 3; at 10c per set.

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TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

Nesting of the Brown Creeper.

The Brown Creeper (*Certhia familiaris americana*) is not a rare bird in this locality, yet can hardly be called common. Though this bird is not considered regularly migratory it moves

southward in the fall, and is rare or absent in this locality from the 1st of November to the 15th of March.

This migratory movement may be a partial one like that of the Crow, the bird wintering a little further south. I saw one in a yard in the city of Waltham, Mass., the 4th of Dec., '95, where it made a short stop as it was promptly driven out by the ever-present English Sparrow. It is a rather solitary bird, usually staying in the old woods where it may be seen ascending the trunks of the large trees usually in a spiral course, all the while busily examining the crevices in the bark for insects or their larvae. Its ascent is rapid, considering the extent of its search, and is accomplished by upward hops as a Woodpecker ascends, but the motion is so smooth and easy that the bird seems to almost glide up the trunk. When the bird has ascended as high as it wishes, it invariably takes wing, to alight at the base of the same or an adjoining tree for another ascent, never hanging head downwards as the Nuthatches do.

It is frequently found in company with Chickadees, Nuthatches and Downy Woodpeckers, but it is probably a similarity of food rather than social aspirations on the part of the Creeper that is the cause of their being found together. Usually not more than two birds are seen at one time, but occasionally in the fall the parent birds and their brood are seen together. The Creeper is little noted for its musical ability, for, though it has a sweet song it is so rarely uttered that but few have ever heard it. I have heard the song but once. It was one of those mornings, bright with the promises of coming

Spring, that brings our birds back from their winter haunts, and I had not gone far before I saw the first Robin of the year.

Soon after, I entered a block of woods and had not been there long when I was greeted by a song, loud, clear, and musical, though of short duration. The song was new to me.

I hastened to locate the singer and was surprised to find it a Brown Creeper. Pausing in its upward course for an instant it lifted its head and uttered the song, then continued its search for food at once. The song was uttered at frequent intervals, always with but momentary cessation of labor as though the bird was too busy to spare much time even for song.

I was not aware the bird nested in this locality until I found an empty nest in June, 1892. Since that time I have found and examined fully a score of nests only one of which contained eggs, most of them being old nests. The nests are all very similar in construction and location, and are built at heights varying from three to fifteen feet from the ground.

A mixed growth of old trees among which are dry mast-like stubs on which the bark is loosened and partly gone is their favorite nesting site. The stub of a balsam fir is almost invariably chosen, though stubs of other trees may be more numerous. Just why this kind of stub is preferred is difficult to determine, but I think it may be in consequence of the inner fibers of fir bark being quite "stringy," thus making the attachment of the nest less difficult. To the inside of the loosened scale of bark the nest is attached, invariably quite independent of the trunk for support, though if the space is narrow the nest may rest against the trunk. The nest is built in the form of a crescent, both ends elevated and the middle depressed. The crescent form is preserved throughout the structure, a sec-

tion from the middle of the nest exhibiting that form. It is quite large and bulky. A nest before me measures from the depressed center to the bottom, six inches; from the horns of the crescent to the bottom, nine and one-half inches; width, six inches; depth at top (distance between bark and trunk) two inches, with a gradual expansion toward the bottom.

Composed of fine shreds of bark, soft punky, decayed wood, fine twigs, many scales of rough bark ranging from the size of a dime to a quarter, all held together and attached to the bark with insect webs and cocoons. Very many of the latter are used and to such good purpose, that, though the nest looks very flimsy, it is really attached quite firmly to the bark. The lining on which the eggs are laid is soft, rotten wood, fine fibrous bark and cocoons. Some nests have feathers, hair and plant-down used in their construction. A nest containing five fresh eggs was found June 26th. This was probably a second set, as I found another nest not far from it that contained the broken shells of some eggs which I concluded was the first set, by some means destroyed. I left it, thinking the set incomplete, but found the bird setting on the five eggs when I returned the next day. She sat closely. I rapped on the stub without effect, then with a small stick struck the scale of bark over the nest as hard as I dared, but she refused to leave until I pulled the bark aside.

The eggs when emptied of their contents are pure white, with reddish dots mostly about the larger end where they tend to form a wreath, leaving the extreme end unspotted. They resemble eggs of the Chickadee but are smaller, measuring about .55 x .44.

If the nest is disturbed before eggs are laid I think the birds usually abandon it, as I have found other nests apparently nearly ready for eggs, but though I was careful not to disturb

them more than was necessary, they have always been deserted. The nests are so well shielded from the elements by the bark, that they last for several years as they are not likely to be destroyed, so long as the bark remains attached to the trunk.

C. H. MORRELL, Pittsfield. Me.

The Movements of Birds.

The movements of our birds on the ground, in the trees and air, or on or in the water, are very interesting to the observer, and in themselves form a vast field for observation. Many birds may be compared with man and this is often done in relation to habit and social attributes; and we may also make comparison in regard to movements; more particularly concerning ground exercise. We are all apt to form an opinion of a person from watching his style of locomotion; and it is a common occurrence to remark on the probabilities of a passing pedestrian's worth if we see a prompt step and active movements. Among the birds we will find that there is a greater variation in the styles of moving about than there is between the professional pedestrian and the neighborhood lazy man. Yet we find that the lazy man is at least equally entitled to a living with the rapid stepper. The principal of "survival of the fittest" evidently favors the slow man, for it may be said in all truth that he generally outlives the active man. In the economy of nature we will see that those of slow movements evidently have a place to fill in life's scope, and that the active and strong of limb, though trotting in a different class, have no wonderful advantage over the lame and halt, if advantage is taken by the handicapped of the opportunities presented. We may say that we have the making of our lives, yet at the same time it does seem that some power has the whole scheme 'cut and dried' for

us before hand. The remarkable activity of the lizard, known as the swift in no way better provides for its wants than do the clumsy movements of the common toad.

Among birds, a great variation of movements exist, and perhaps in no department in nature, unless we except the insects, shall we find so many interesting features. Most birds progress by flight—but some never leave the ground; others rarely leave the water and can barely waddle on land and cannot fly, and still others can fly, run and swim with grace, but this division is small. If we should form a classification on the forms of flying, swimming and running, the present system would be sadly entangled.

First come the foot movements, and we will begin with the perchers. In the Robin we have an undignified hopper or jumper. The Thrushes are all hoppers, while the Sparrows hop, or else progress by a rapid trot. Most of the Warblers hop, and all small birds will use their wings to increase their speed when searching on the ground on foot. The Gnatcatchers are hoppers, as are also the Ruby-crowned and Golden-crested Kinglets, but they often hang head down after the manner of the Chickadee. The Nuthatches move by hops on the ground as does also the Black-and-white Creeper, but these birds never creep even when on the bark of the tree, although we call them by that name; for creeping, is to place one foot before the other, as we understand it. Of the large Warbler family I have had good opportunities to study about thirty species and have noted marked variations. Nearly all of the members of this family progress by hops, but the Water Thrushes and Oven-bird walk with great sedateness. It is a very interesting sight to observe an Oven-bird move about. I was watching one, one day when it disappeared in a small billock of leaves,

which was visited and its eggs found. The Large billed Water Thrush often wades about in the little woodland pools where he steps as regularly as upon land. Some of the other warblers have acrobatic tendencies and almost rival that droll fellow, the Chickadee. The Mourning and Prairie Warblers often cling to the bark of the pine trees and hang head down.

The Vireos can hop, but they are very deliberate in their movements and generally step gingerly, and I have repeatedly seen them step sideways after the manner of a parrot on a perch. The Cedarbird is much like the Vireos in its foot movements. The Swallows and Swifts are walkers in the little movement they accomplish with their feet. If there is a true creeper, in the proper meaning of the term, it is the swift, in truth it is the only one that I have been able to discover. The Swift will creep up the side of a chimney, which it is able to do by the use of the sharp spines in its tail; first one foot then the other. The Brown (so-called) Creeper, also uses its tail to assist its movements, and so powerful is this prop that I have known of this bird hanging after being shot dead. The Hummer has been seen to step sideways on its perch, but I doubt if these little fellows ever need to hop or walk. The Crossbills walk in a clumsy way like a parrot when feeding, but progress by hops when occasionally on the ground where they sometimes feed. Many of the Sparrows can run with great swiftness. Who has not seen the Grass Finch scuttle along 'in the dust on a hot day in August? The Cuckoos walk like the parrots, while the Woodpeckers hop, so-to-speak, progress, by little jumps, aided by the tail. The Bronzed Grackle is a dignified walker, the Cowbird and Rusty Blackbird also.

All the waders and shore birds walk or run; the smaller ones, as the Plovers and Sandpipers moving with great

swiftness, while the Herons move sedately, if not with true dignity. Hawks and Owls move by walking when tempted to this form of locomotion, but I have seen them hop in a most ludicrous and undignified manner. Quails and Grouse walk and never hop. The Ruffed Grouse is the most dignified walker in the woods.

M. GIBBS, Kalamazoo. Mich.

Summer Ornithology in Southeastern Massachusetts.

By DR. C.C. PURDUM AND F.P. DROWNE.

Lying at the "heel" of Cape Cod and at the point where Buzzards Bay and Vineyard Sound join their waters, is the interesting little village of Woods Hole. Once a mere name on a map as far as its importance went, now, thanks to the scientific work of the United States Fish Commission, a great biological center.

Here are situated the headquarters of the above institution for the hatching of fish in the east, with its yearly output of millions of young lobsters, codfish, flat fish, tantog, etc., and during the summer months the investigation department of the same institution.

After the establishment of this enterprise, it was but a short time ere the attention of scientists from all over the world was called to this locality as a point "par excellence" from which to draw their material for investigation. Men of action soon founded here the Marine Biological Laboratory, an institution for the study of marine biology, and since that time it has steadily grown from a small class in one branch of study, to several hundreds of students interested in all forms of marine life.

But the article is not designated to set forth the advantages of this little village as a marine biological center, although its surroundings of rapidly running water, many islands and points, its great rise and fall of tide, (facilitating the collecting of many forms of marine

life) might seem to make this the best plan to follow. But as Kipling says, "that is another story."

So let us consider those points about this locality where our interest most lies and which furnish the greatest attractions for our friends, the birds.

Probably in Massachusetts there is no locality containing such a variety of topography and fauna. Hills, valleys, broad expanse of meadows and marsh; thickly wooded tracts and barren deserted sand hills; stretches of gravelly and sandy beach; extensive swamps of cedar, choked in many places with impassable thickets of briar and ivy, and in others, open and easily traversed. Ponds, great and small, scattered here and there over the face of the country, at times spreading a broad expanse near the sea, and sending its waters through the narrow stream which serves as its outlet, to join those of its greater brother; at others resting like a mirrow between some tall and frowning hills, and seeming from its situation to be especially placed by an all-wise power for the benefit and use of the creatures of the field and wood.

Coupled with the topographical mixture, the greatest variety of trees, shrubs and other forms of plant life are met with in agreeable profusion and confusion, and while space will not permit us to go into detail here, we will endeavor to speak of the various forms while giving a short "resume" of the birds met with in this locality during a two weeks' stay, (July 16th to Aug. 1, 1901) during which time were in intimate touch with nature.

Probably the first birds to attract the attention of a visitor at Woods Hole and vicinity, are the Terns or so called "Mackerel Gulls." Flying about in every direction, occasionally making trips overland from "the Sound" to "the Bay" shore, or to some island, lake or lagoon, and giving voice at frequent interval to their harsh, grating, scream,

they naturally arouse the curiosity and interest of any one whether bird student or not.

But it is of the land birds that we wish first to speak, and as before stated, owing to the very varied character of the country, there is no lack of variety among the feathered inhabitants.

Perhaps it may be well to mention briefly the bird life as a whole, and then give a few notes on each species as we found it during the two weeks' stay mentioned above.

The native of Wood's Hole if asked what birds were found in his vicinity would undoubtedly reply "Crow, Kingfisher, Sparrow, Wren, Robin, Catbird, Woodpecker, Blackbird, Swallow and those little birds with lots of green on them," meaning by the latter the Vireos and Warblers. He would be correct as far as he went, for all these are common and easy to observe.

The Robins and Catbirds were particularly numerous this year, exceeding in numbers that for the past ten years, according to our notes.

A ramble through the woods reveals several of the Warblers and the Red-eyed Vireos in plenty, while in the low underbrush the Towhee flits about, often coming close to the intruder, curiosity overcoming whatever sense of fear or better judgement he may have.

An occasional Cuckoo startles us with his loud note, while deep in some tangled thicket we may get a glimpse of a departing Brown Thrasher.

Now and then the loud cry of a Jay or the peculiar note of the Flicker wings through the woods.

Crows hold their meetings in various portions of the forests, all speaking at once and each one apparently endeavoring to make his voice heard above all the rest.

Along the stone walls and in the open fields, the Song and Chipping Sparrows have it all their own way, save when they are driven to shelter by the un-

looked for appearance of a Sharp-shinned Hawk.

Flying low over the marshes and open meadows, may be seen the Barn and White-bellied Swallows and Chimney Swifts, busily engaged in gathering up all insects that may venture to fly about.

The beaches are practically deserted save for an occasional Sandpiper or a few Sparrows or a Kingfisher or two, the former seeking among the dry grass and sea-weed for some especially delicious morsel with which to partially satisfy their extremely voracious appetite; the latter making trips from some fish trap pole to its hole in some one of the numerous bluffs with a small fish to feed its young.

In the tall grass by the shore above the high water mark, we flush the Finches and Sparrows, only to see them settle after a flight of only a few yards.

The shores of the numerous ponds are more prolific in bird life. Here we find the Kingfisher in larger numbers and now and then a Heron, standing silent and watchful in some secluded nook, while the rank grasses, shrubs and bushes growing luxuriantly by the edge, furnish shelter to many a Warbler or Thrush.

Thus we find the birds about us in this locality wherever we may turn and the following list will show what varieties we were able to note during our short stay of two weeks.

The Terns will be made the subject of a special paper and discussed at length later.

Not much time was spent upon the water and very few sea birds were noted, but it is doubtful if there were many more to see at this time of the year.

1. *Urinator imber*; Loon. Two specimens seen in Buzzards Bay.

2. *Larus atricilla*; Laughing Gull. Two adults seen at Wupecketts Islands in Buzzards Bay. They kept at a great height, their cry sounding very clear

and distinct over the screaming of the Terns.

3. *Sterna hirundo*; Common Tern. Very common. Found breeding on the Wupecketts Islands.

4. *Sterna dougalli*; Roseate Tern. Common. Breeding at Wupecketts Islands.

5. *Sterna paradisea*; Arctic Tern. Common. Breeding at Wupecketts.

6. *Merganser serrator*; Shelldrake. Several specimens seen about the shores and were at first supposed to be injured birds, but we soon found that they could fly, dive and swim perfectly. In fact we saw several fly long distances, proving conclusively that they remained in this locality from choice, and were not maimed in any manner.

7. *Oidema deglandi*; White-winged Scoter. Several seen. All were in perfect condition and flew long distances.

8. *Ardea herodias*; Great Blue Heron. One seen.

9. *Ardea virescens*; Green Heron. Numerous adults seen and three nestlings noted in small cedar swamp.

10. *Nycticorax nycticorax naeviens*; Black-crowned Night Heron. Common. Breed in large numbers in rookeries.

11. *Tinga minutilla*; Least Sandpiper. Several seen on the beaches.

12. *Actitis macularia*; Spotted Sandpiper. Common. Both on beaches and along the edge of ponds.

13. *Accipiter velox*; Sharp-shinned Hawk. One seen.

14. *Accipiter cooperi*; Cooper's Hawk. One seen.

15. *Buteo lineatus*; Red-shouldered Hawk. One observed with large flock of Crows in full pursuit.

16. *Falco sparverius*; American Sparrow Hawk. One seen.

17. *Megascops asio*; Screech Owl. One seen near Cotuit.

18. *Coccyzus americanus*; Yellow-billed Cuckoo. One shot.

19. *Ceryle alcyon*; Belted Kingfisher. Common about ponds and shores.

20. *Dryobates pubescens*; Downy Woodpecker. Only one seen. That one near Cotuit.

21. *Colaptes auritus*; Flicker. Common. Observed numerous adults; and birds of the year able to fly.

22. *Chordeiles virginianus*; Night-hawk. One seen at Cotuit.

23. *Chaetura pelagica*; Chimney Swift. Very common.

24. *Trochillus colubris*; Ruby-throated Hummer. Several seen.

25. *Tyrannus tyrannus*; Kingbird. Common.

26. *Sayornis phoebe*; Phoebe. Only few seen, but their note heard frequently.

27. *Contopus virens*; Wood Pewee. Very common.

28. *Cyanocitta cristata*; Blue Jay. Only few seen at Wood's Hole, but very common at Cotuit.

29. *Corvus americanus*; Crow. Very common.

30. *Molothrus ater*; Cowbird. Several seen.

31. *Agelaius phoeniceus*; Red-winged Blackbird. Common.

32. *Sturnella magna*; Meadow-lark. Several seen.

33. *Icterus galbula*; Baltimore Oriole. Common. More specimens seen in first year plumage than in adult.

34. *Quiscalus quiscula*; Purple Grackle. Common.

35. *Carpodacus pusupureus*; Purple Finch. Several observed in low pine woods.

36. *Spinus tristis*; American Goldfinch. Fairly common.

37. *Spizella socialis*; Chipping Sparrow. Abundant.

38. *Melospiza fasciata*; Song Sparrow. Common.

39. *Melospiza lincolni*; Lincoln Sparrow. Two specimens taken. The only ones seen on the trip. Both shot on the edge of brush heaps.

40. *Pipilo erythrophthalmus*, Towhee. Very common. July 20th we found a

nest situated about ten feet from the ground in a low bush, containing one fresh egg. On the ground near the nest was a half fledged nestling very much alive. We searched the vicinity carefully but failed to find any more young birds.

41. *Piranga erythromelas*; Scarlet Tanager. Several seen.

42. *Chelidon erythrogastra*; Barn Swallow. Abundant.

43. *Tachycineta bicolor*; Tree Swallow. Common.

44. *Vireo olivaceus*; Red-eyed Vireo. Very common.

45. *Ampelis cedrorum*; Cedar Waxwing. Common. Found the bird feeding in the white mulberry trees.

46. *Mniotilta saria*; Black-and-white Warbler. Very common. Often met with in flocks in company with *Dendroica virens* and *Dendroica vigorsi*.

47. *Compsothlypis americanus*; Parula Warbler. Several seen. Not common.

48. *Dendroica pennsylvanica*; Chestnut-sided Warbler. Several seen.

49. *Dendroica virens*; Black-throated Green Warbler. Common. Often seen in flocks.

50. *Dendroica vigorsi*; Pine Warbler. Common in low pine woods.

51. *Dendroica discolor*; Prairie Warbler. Several seen. Not common.

52. *Seiurus auricapillus*; Oven-bird. Common.

53. *Geothlypis trichas*; Maryland Yellow-throat. Fairly common.

54. *Galeoscoptes carolinensis*; Catbird. Abundant. A common visitor to the mulberry trees.

55. *Harporhynchus rufus*; Brown Thrasher. Fairly common.

56. *Troglodytes aedon*; House Wren. Fairly common.

57. *Parus atricapillus*; Chickadee. Very common.

58. *Turdus fuscescens*; Wilson's Thrush. One shot.

59. *Merula migratoria*; Robin. Very

abundant. *

60. *Sialia sialis*; Bluebird. Only one seen and that at Cotuit.

61. *Passer domesticus*; English Sparrow. Common resident, though it is not yet present in large enough numbers to seriously disturb the other birds.

Thus we have a list of over sixty birds observed in two weeks. There is certainly no dearth of birds at Wood's Hole and surrounding country, and as they are but little disturbed in their haunts by man it is to be hoped and confidently expected that they will increase.

*Probably the most interesting thing observed about the Robins at Wood's Hole was their particular liking for the fruit of the white mulberry. One of these trees stood about thirty feet from the door of our cabin and from early morning till dusk a steady stream of new arrivals took the place of those departing with satiated appetites, and at any time of the day at least a dozen Robins could be counted in the tree.

Not only did the Robins find this fruit very pleasing to their palate, but the Vireos and Catbirds and Warblers also were noticed in large numbers, so that we came to call this particular tree "the bird trap." The following is a complete list of the birds seen feeding in this tree:

Merula migratoria.
Vireo olivaceus.
Mniotilta varia.
Ampelis cedrorum.
Colaptes auratus.
Galeoscoptes carolinensis.
Spizella quiscula.
Spizella socialis.
Icterus galbula.
Trochilus colubris.
Seiurus auricapillus.
Dendroica virens.



St. Louis Exposition.

An advance copy of the Classification Book for the Louisiana Purchase Exposition at St. Louis in 1903 has been received. Fifty-three pages are required for a mere enumeration of the groups and classes of exhibits. The exhibits of the entire exposition are divided into fifteen departments as follows: Education, eight groups; art, six groups; liberal arts, thirteen groups; manufactures, thirty-four groups; transportation, six groups; agriculture, twenty-seven groups; horticulture, seven groups; forestry, three groups; mining and metallurgy, five groups; fish and game, five groups. [Three of the classes under one of the groups of this department will be of special interest to readers of the OÖLOGIST, viz;

Group 121.—Products of hunting.

Class 723, Collections of wild animals; menageries.

Class 724, Original drawings of land and amphibious animals and birds. Collection of birds and eggs.

Class 745, Skins and furs in the rough. Skins prepared for the furrier. Taxidermists work, undressed feathers and bird skins]

Anthropology, four groups; social economy, thirteen groups; physical culture, three groups. The total shows 144 groups and 807 classes, and under each class is a possibility for a multitude of exhibits. Nothing reflects more clearly in so small a space the variety of human occupations or more comprehensively the broad scope of the great exposition which the people of St. Louis are preparing for next year. A place is provided for every conceivable product worthy of exhibition, and all nations of the world have been invited to take part. Acceptances have been received from many. The work of construction is progressing earnestly. The buildings will have an aggregate floor space of 200 acres and the grounds a total area of 1000 acres. The money now available aggregates \$15,000,000, besides \$1,000,000 appropriated by the State of Missouri and various liberal sums from other states. The Classification and the Rules and Regulations of the Exposition will be mailed free on application to the Director of Exhibits, World's Fair, St. Louis.

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VOL. XIX. NO. 3.

ALBION, N. Y., MARCH, 1902.

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The Oologist Advertiser. Vol. I No. 1 (Aug. '90).
Bulletin of the Cooper Ornithological Club. Vol. I No. 3 (May-June '99).
Bulletin of the Michigan Ornithological Club. Vol. III No. 3 (July '99) to date.
The Nidologist. Vol. I Nos. 1, 2 (Sept.-Oct. '93) and 6 (Feb. '94).
The Osprey. Vol. I Nos. 2 and 4 (Oct. and Dec. '96). Vol. III No. 8 (April '99).
The Taxidermist. Vol. I Nos. 5 (Nov. '91) and 11 (May '92).
Oregon Naturalist. Vol. III No. 10 (Oct. '96).
The Iowa Ornithologist. Vol. II Nos. 2 and 4 ('96); vol. III Nos. 2 and 3 ('97).
The Ornithologist and Oologist. Semi-Annual. Vol. I No. 1 (Jan. '89).
The Journal of the Wilson Ornithological Chapter of the Agassiz Association. Vol. I No. 2 ('93).
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THE OÖLOGIST.

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ALBION, N. Y., MARCH, 1902.

WHOLE NO. 186

THE OÖLOGIST.

A Monthly Publication Devoted to
OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

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Vigor's Wren.

(*Thryothorus bewickii spilurus*.)

There are few birds in Southern California whose nests are harder to discover than those of this unobtrusive little Wren. Wherever there are rocky can-

yons, particularly those which contain scattering pools of water, there will be found one or more pairs, and, notwithstanding the fact that they are noisy and make few attempts to conceal their presence, I do not believe that there is any other bird of equal distribution in Orange county of which local collectors find fewer nests than they do of this species.

I have endeavored, through the medium of previous letters, to acquaint the readers of the Oölogist with the character of the country with which collectors of my locality have to contend, so will not take up that line to-day other than to say, in the beginning, that there are many canyons, both precipitous and rocky, which come down into the larger gulches near their mouth.

In these small canyons we find the home of Vigor's Wren. Amidst the prickly jungles of the tuna-covered flats the Cactus Wrens abound, while back among the oaks and sycamores there is a numerous and noisy contingent of Parkman's Wrens, but among the crevices and along the ledges of this rocky wall there is a continued roundelay, all coming from the throat of a bird not nearly so large as an English Sparrow.

In my mind the species under discussion should have been named "*troglydotes*"—which means "cave-dweller"—rather than the very domestic little House Wren, for it is never found far from rocks, and, in so far as I am able to learn, never nests anywhere except in crevices of rocky ledges, interstices between boulders, or in small caves.

The nesting season commences early, usually before the first of April, though that is probably the best month in which

to look for full sets. These are usually of five eggs, occasionally four or six, and, very rarely, seven. Sets of four are usually second layings, and quite commonly deposited in the same place from which the first set was taken, provided that the nest was not destroyed or taken with the first set.

In many cases, especially where wood rats are abundant, the Wrens will select a crevice between two rocks, into which even a rat cannot go. It is best, when a nest is found in such a location, for the collector to pass it by, as it cannot be obtained without the use of a crow-bar and this method, ninety-nine times out of a hundred, will result in one or two, if not all, the eggs getting broken. Where holes in the solid rock, as in the faces of numerous southern California cliffs, are available, however, the little pair will select a good sized cave and in its sandy floor scratch out a hole large enough to hold a loosely woven nest.

While looking for sets of the Pacific Horned Owl, through the first three months of the year, I frequently find such nests either incomplete or containing one or two white eggs heavily spotted with cinnamon or light brown.

On the 26th of March, 1900, I took three sets of Vigor's Wren, consisting, respectively, of five, six and seven eggs. This, I am quite willing to admit, was a banner day for Wrens, and all the more peculiar when it is remembered that I was hunting for Hawk's eggs along the high cliffs of the big canyons and not giving a thought to so small a bird as a Wren. The first set was in a crack between the halves of what had once been a huge boulder and the entrance was right on the ground. This nest was firmly and neatly woven of bits of fine grass blades, together with strips of the inner bark of a dead elder tree growing at the base of the cliff. Nest measured $5 \times 1\frac{1}{2}$ in. outside and $2\frac{1}{2} \times 1$ in. inside, the diameter being given first in each pair and the depth last.

This set was so badly incubated that

it could not be saved. I might add here that I killed (a few moments after finding this nest) a rattlesnake, which was lying nicely coiled up some ten feet from the Wren's home. He measured five feet eight inches in length, and his skin, when dried, seven inches in width at the widest part. But such an incident as this merely adds zest to the gentle proposition of oology in this section.

However, the set of six was taken from a similar location, but the set of seven was in a nest in a depression in the dirt floor of a small cave such as I described in the beginning of this article. Both were saved and though both have since gone out of my hands into other collections, I can recall every detail connected with their taking as clearly as though it happened yesterday.

Probably my next paper in the OÖLOGIST will deal with some one of the species of Owls indigenous to Orange county, which I have not already discussed.

HARRY H. DUNN.

A Green Heronry.

On May 20, 1901, while walking through a piece of woods I came upon one of those natural hollows commonly called "kettle-holes."

This one was about 150 feet across and was partially filled with water, bushes and trees. As I came nearer I was surprised to hear a number of hoarse "quaks," and on looking through the bushes I saw a large number of Green Herons rising from all parts of the "hole." There were so many of the birds that I hardly thought they could be nesting there as I had never before seen any in that vicinity. On account of the water I was unable to approach very near, but within a half hour most of the birds had returned.

I visited the place again a few days later and as before the birds flew up on

my approach, but this time they were slower in leaving, circling around for some time and peering down into the bushes.

The following day I obtained a pair of high boots and determined to investigate. The water was deeper than I expected and the bottom soft and treacherous, but after several attempts I succeeded in making my way to the bushes.

Here the depth of the water increased and I was only able to cross one end.

I had hardly gone ten feet into the bushes when I found the first nest. The old Heron seemed loath to leave and when obliged to, went only to an old dead tree near by. From this perch she sat looking down at me, her glossy back and shoulders gleaming in the sun.

The nest was some five or six feet above the water in the branches of one of the bushes. It was made of sticks and twigs and contained four greenish eggs. As one of them was already "pipped" I left them and proceeded to see what was before me. A few feet further on I found another nest, but empty. This one was only about three feet up in the bushes. At this point I found I had formed such a firm attachment with the muddy bottom that I had great difficulty in proceeding. At length, however, after getting nothing but a couple of wet feet, I managed to reach a large tree, one of whose branches afforded a resting place just above the water. From here I looked around and discovered a nest only a short distance from me. It was placed in the top branches of a laurel bush, about eight feet up. It was a loosely made structure of twigs and almost flat. It contained four nearly fresh eggs, which I took. They measured 1.61×1.15 , 1.55×1.13 , 1.62×1.17 , 1.60×1.20 .

I only found one more nest, though I have no doubt there were others as I was able to examine only a small portion of the place. This last nest was somewhat larger than the others and

contained four partially incubated eggs. They are somewhat smaller than the other set and not quite so elongated. They measure as follows: 1.60×1.15 , 1.50×1.12 , 1.51×1.16 , 1.47×1.17 .

When I reached "terra firma" again I watched for some time the returning Herons as they first circled around or alighted in the top of some tree and then slowly dropped into the bushes; then as it was beginning to grow dark I started for home.

KARL B. SQUIRES,
Greenport, N. Y.

Sterna on Weepeckets.

By C. C. PURDUM, M. D.

The "Islands of the Weepeckets," three in number, lie in the waters of Buzzards Bay, and form a short chain, extending in a general northeasterly and southwesterly direction, being separated only by a narrow body of water from the large island Naushawn, which is the easterly extremity of the chain of islands dividing the waters of Buzzards Bay from those of Vinyard Sound. The inner or most southerly of these islands is the largest of the group, and contains about six acres of ground which rises by a broad sandy beach out of the sea. The top is covered by a variety of rank grass, wild strawberry and milkweed, but no trees, or bushes larger than those of the wild huckleberry are to be noticed. The eastern side of this island is made up of the broad sandy beach before spoken of, and upon it the Terns which breed upon this and the other two islands, may be seen in great numbers, standing in perfectly quiet ranks, taking a sun bath with evident enjoyment. The western side of the island is of a more diversified nature; the sandy stretch of beach being here broken up by rocky intervals and huge boulders, while in places the rank vegetation runs almost to the water's edge, being separated from it in some places

by only a dense wall of dry, moist and decayed seaweed, which lines the high-water mark along the entire western shore.

The middle or smallest island rises as an abrupt plateau from the sea, the base being composed of the ordinary boulders of the shore, while from the highwater mark the small elevation of about one-quarter of an acre rises to a height of about twenty feet. The soil of these islands (the middle and outer) is of the ordinary clay-sand mixture of the coast, covered with a foot of the finest black loam, caused by the constant development of guano from the excrement, etc., of the Terns.

The outer island differs only in point of size from the middle one, being about twice as large and sitting far out in "the bay" as it does, if forms the most popular breeding place for the Terns.

My last visit to these islands was paid at the very end of the breeding season, during the summer of 1901, and I consequently had the best of opportunities to observe the young and methods of feeding, and I think I can put the information I desire to impart in no better form than to quote "ver batim" from my field notes of the trip.

July 27, 1901.—After breakfast we started for the Weepeket Islands and after a hard pull of nearly two hours against wind and tide, we arrived and beached our "skiff" on the gravelly beach of the outer island or "North Pecket" as the fishermen call it.

Upon our approach the Terns arose in a great flock and flew about us in large numbers, giving note of their harsh grating cry. Immediately upon landing, we took several pictures of the flocks of Terns and also of several young birds in the water. There was a large number of young of the year, either a few yards off shore or just at the water's edge, and the old birds would bring food to them there. There seemed to

be the greatest impartiality about this method of feeding. For instance, we saw several different Terns feeding one young bird, and following the motions of one bird carefully, we observed her catch several small mackerel, and in each case the fish was deposited in the voracious maw of a different bird. Heavens! Would those young birds never get filled up? We saw at least a dozen fish deposited in the gaping jaws of one young bird as he floated lazily upon the waves, a few yards from shore, and there is no means of knowing how long this had been going on or how many more this lusty youngster could get away with before the day ended.

Some of the young attempt to swim too early, or are washed off a rock by an incoming wave, for we saw several of the birds in an apparently helpless condition in the water, and upon taking them out found them too exhausted to move.

After taking what pictures we wished from our landing place, we started to explore the island and although the season was far advanced, found several sets of fresh eggs.

This is the latest I have ever recorded unincubated sets from this locality, although Mr. George Gray of the Marine Biological Laboratory at Woods Hole, tells me he has taken fresh sets as late as September. This must have been at other localities on the coast, for I have never before found fresh eggs of either *hirundo*, *dougali* or *paradisea* later than July 27th. Most of the nests were on the northern end of the island and were of the common variety (*S. hirundo*). They were situated in the ridge of seaweed just above highwater mark.

The nest is a very hollow excavation in the seaweed, and the process of nest making is certainly not a very lengthy or laborious proceeding as I have noticed it in the past. The female merely nestles into the seaweed or sand as the case may be, and with a few well di-

rected flaps of the wings and tail, and a few kicks with the feet, she shapes the nest much in the same manner as the domestic fowl hollows a nesting place in the dust. In these shallow excavations the birds deposit two, three or four eggs, which to describe thoroughly would take much more space than the length of the present paper will permit. Suffice it to say that they are of a pale greenish-brown ground color, with spots, splashes, scratches and dots of various colored markings, ranging from a nearly jet black to a pale green. But not always is the female so choise of a location. Frequently a depression in a piece of driftwood or even the rough flat surface of a rock serves for a "nest."

There seems to be no difference in this particular between the three varities (in this locality at least), and I have found nests of each in the most out-of-the-ordinary situations (that is to say, to my mere human intellect, but probably Mrs. Sterna has ideas of her own, and knows more about the economics of her household than I.

We found many dead young birds as we walked about the island, and upon looking more closely than at first, we easily found the reason for finding so many corpses, for stowed away under boulders, in the crevices of rocks, and under pieces of driftwood, all below the highwater mark, we discovered many of the dead young birds, who probably crept under these sheltering roofs to get out of the excessive heat, and became imprisoned by the rising tide and were either drowned or perished from starvation. Also on the top of the island among the tall rank grass and weeds, we found many young birds, both alive and dead. I should judge that the larger number of dead birds on the top of the island must have perished from starvation, as it was very difficult to find them in the thick vegetation. I have visited the island many times, but never saw so many dead birds before.

As we left the outer island [and were rowing to the middle one we were a little surprised to hear the peculiar note of the Laughing Gull (*Larus atricilla*), and looking up saw two of these birds closely pursued by a great number of Terns, who seemed intent upon driving the Gulls from the locality. They were finally successful in this, and after floating lazily about at a height to which the Terns did not seem to care to venture, the Gulls departed to the westward.

On the middle island I expected to find the Arctics, (*S. paradisea*) breeding, but none were to be seen, and as nothing but the common variety (*S. hirundo*) were breeding on the outer island, the absence of the Arctics was all the more noticeable.

Landing on the middle island, we found much the same condition of affairs as on the outer one, except that here the Roseates (*S. dougali*) were breeding with the common variety, but on neither of the three islands did we find the Arctics. No satisfactory reason has been offered for the sudden disappearance of the Arctics from the locality, and in years past they have been observed breeding here in large numbers.

On this island we were confronted by a sight which made us pause in as great consternation as that of our friend Robinson Crusoe, upon discovering the footprints of a human being upon this desolate island. Turning the corner of a large boulder, we came upon a pile of broken eggs, probably numbering several hundred. We turned the heap over carefully and as near as could be told each egg contained a chick nearly ready to break the shell. Ordinarily we are not particularly profane, but at the sight of this wholesale "murder by contract" we (as Eugene Field says) "uttered things my pious pen would leifer not repeat." This sad destruction was wrought by the Portugese lobster fishermen, who make their headquarters in

Buzzards Bay, and use the Terns' eggs for eating, cracking each egg to see if it is "good."

Vowing to make such wholesale slaughter public, and to call the attention of the proper authorities to it, we turned away, sick at heart to think that by the unrestrained rapacity of these degraded law breakers, more harm had been done to the Tern colony on these islands, than could have been done by a hundred legitimate collectors in a dozen years.

Before the next breeding season, the writer will make strenuous efforts to have those in charge of the "Thayer fund for the protection of Gulls and Terns" look into the matter thoroughly and prosecute to the full extent of the law, such degraded wretches and unfeeling brutes, as these same men who look at nature through their pockets and stomachs.

The wardens of the A. O. U. protective committee are doing a noble work and the League of American Sportsmen is "on deck" to restrain the breakers of the law regarding birds, but there remains an opportunity right here to protect these beautiful birds, which otherwise will soon be reduced so in numbers that our waters will lose one of their chief beauties and these lonely isles, which have hitherto given refuge and safety to thousands of pairs of birds, will become a "desolate waste" indeed, and "Sterna on Weepeckets" will be a thing of the past.

Let every earnest and conscientious bird lover and student unite in one solid front for the prosecution of these law breakers, and without tiring give these beautiful birds the protection and security they deserve.

Among the Birds of Cuba.

Guama is a mining camp of the Cuban Steel Ore Company, about 40 miles south-west from Santiago. The country was practically virgin forest before the mines were discovered and save for the small clearings for the camp, mine workings and railroad remains in its primeval wildness. After the forest denuded and scenic rifled Porto Rico, one draws a long breath of relief and joy as he stands in the solemn depths of the woods here beneath the giant trees.

The camp is built in the valley of the Guama River, a mere creek during dry season, but in heavy rains rising with astonishing rapidity to a mad rushing torrent. About this valley hills rise above hills abruptly, and the highest mine is at an altitude of some twenty-five thousand feet above sea level.

As one lands at the wharf, some two miles from the camp, the first birds to greet him will almost invariably be the omnipresent Vultures, *Cathartes aura*. In Santiago these birds roost on the roofs of buildings and many a time I have passed them so close that a "38 extra long" shell of No. 10 in my collecting tube would have brought them down.

Strolling out on any of the trails one hears from every side a wierd cry varying somewhat, reminding one now of the Hyla's note, again of a Woodpecker's cry.

Again standing quietly for some time he may suddenly discover another perfectly motionless being, whose brilliant coloring might have led one to suppose he would be exceedingly conspicuous. This is the bird whose tribe are authors of the wierd cries. It is the Cuban Trogan. He is about ten and twelve inches long, brilliant metallic blue on head like our Crow Blackbirds, becoming more greenish on back, wings barred with white, outer three pairs of tail feathers tipped with same, inner three pairs like

back, breast soft grey like the breast of Shrikes, belly and under tail coverts scarlet.

His feet are small, legs short and he has two toes in front and two behind. He is a fruit eater.

Another common bird on these trails is *Mimocichla schistacea*, a Thrushs whose appearance suggests the Robin in form, size, red bill and legs, but his general coloring is a greyish blue. He is not at all demonstrative, but rather retiring and chary of exhibiting his person. As you walk along the trail a rustle of leaves in the bushes at the side betray his presence and you catch a glimpse of his trim form darting into thick cover.

If you are quiet, however, his curiosity gets the better of him and he soon hops out to have a better view of you.

On these trails, too, you are liable to see or hear any one of several Dove, and Pigeons—*Columbia leucocephala* and *C. inornata*, *Geotrygon montana* and *Stariaenas cyanocephala*.

At this time the trees are alive with migrant Warblers from the States.

Their incessant chippings and lisplings put to shame the strange quiet of many of the native birds. Here are the Water Thrushes and the Ovenbirds, the Black-throated Blue, the Redstart, the Black and White and others less conspicuous than those mentioned. There are also a number of the Vireos. A rather quiet little bird you may see perched on a twig attending strictly to the business of getting his breakfast is the little Flycatcher, *Blacicus cariceus*.

As you pass the weed-grown fence rows of the camp too conspicuous and delightful little bits of feathers are the Sparrows, *Eulhiaolivacea bryanti* and *E. canora*. In Santiago the boys trap these birds and many others and sell them for cage birds at five or ten cents apiece.

Down on the cleared pasture ground by the river in the scattering trees one

or two of the *Pitangus caudifasciatus*, which look very much like our Kingbird are desporting themselves with a good deal of clatter and incidentally picking up their living. The bill of fare of one who gave up his life that his remains might enrich the halls of fame and the temples of science consisted of a large caterpillar, the legs of a big grasshopper and some small green beetles.

In the edge of the timber by the river you may chance to see an Audubon's Caracara like, a smaller edition of the Bald Eagle, sitting quite dignified.

Then your thoughts go back to the dear old days of spring, both as to season of the year and as to life's season, and childhood's home in old New York State, as you hear the carol of the Flicker; that sound one cannot separate from its association with May days. This is *Colaptes chrysocauleus*, but his "song" sounds the same and he looks much like the bird of the States. In the woods you may meet him in company with the Cuban Green Woodpecker, a pretty fellow, yellowish-green and striped, about the size of our Hairy, with a large round cockade of red and green and a red necktie, and a short sharp bill. One morning I shot five Woodpeckers one after another from one tree, including three species.

The last bird of which I will speak at this time, though this far from finishes the list, is a bird of the night that the Cubans call "Lechuya;" *Strix pratcola furcata*. I have not yet seen them, but am told they are common here and this evening one of the "rural guard" has gone after one for me.

Yesterday the same man brought me a Plover, *Aegialitis wilsonia rufincha*, alive, which he said a boy found, injured, by flying against a telephone wire.

B. S. BOWDISH,
Guama, Cuba.

Dec. 4, 1901.

The Whip-poor-will.

Antrostomus vociferus.

BY CHARLES LINCOLN PHILLIPS, TAUNTON, MASS., AUTHOR OF "FRED-ERICK YOUNG"

"Whip-poor-will, whip-poor-will, whip-poor-will!" What sweet and touching remembrances are revived within me, when I write the notes that represent the nocturnal utterances of this beautiful New England bird!

Kind reader, it at once seems to carry me back to the happy days of childhood; to that time when I lived on the old cuntry homestead, and had every opportunity, for which a boy ornithologically inclined could wish, to become familiar not only with the Whip-poor-will, but with nearly all the birds contained in the fauna of eastern Massachusetts.

This rather sad but inspiring song—if such it may be called—seems to picture in my mind a still, clear evening in June, with a full moon shedding its mellow radiance over the landscape; where every object is clearly visible and sharply contrasted by dark shadows; where all roughness and conflicting shades seem to be blended into charming harmony as if by a potential, magic hand. This calm repose of beautiful nature is food for the soul; in me it intensifies my admiration for the creative power of the Maker, and it also has a tendency to inspire my inner-being with noble and lofty purpose. And, too, on such a night as this, as I stand under the azure vault of the heavens a dark body, on noiseless wings, gracefully wheels above me, and a moment later, from his perch on the pump, the door-stoop, the fence, a rock, or the wall, come the thrilling notes of the Whip-poor-will, with a distinct cluck between each well known utterance.

How loud and clear the notes sound, and how still it seems when he finally ceases. Then, a minute or two later, you may wonder if he is simply resting

or if he has changed position when your thoughts are answered, for the same clear notes reach your ear from perhaps a quarter of a mile away. Then the sound will finally end from that direction, but shortly you will hear it again, but still farther away, and after a while the song will be lost in the distance.

Possibly, along toward midnight you are awakened from your slumber, by one, two, or perhaps three, of these eccentric birds, not any of them over eight rods from the house, trying to outdo each other in vociferous rivalry. They fairly make the welkin ring for a few minutes, then all is silent for a brief space, when the Whip-poor-wills are again heard from a neighboring farm. In this way they may be heard until morning dawns, when they retire to their selected thicket to spend their hours of rest.

It has been my privilege to discover two nests of the Whip-poor-will. Both were mere depressions in the dead leaves in oak woods. Neither was near a log, stump or rock, where this bird is often said to lay her eggs, but in each instance the nesting place was among a scattering undergrowth.

The female is usually flushed from her two creamy-white eggs, which are elliptical in form and very richly marked with shades of brown, lavender and lilac. I know of no prettier egg to be found in this section.

Upon starting the Whip-poor-will from her nest she will fly but a short distance, resting lengthwise on a low branch, which is the custom of the Goatsucker family in alighting, or on the ground, apparently to take her bearings, when she will shortly resume her flight and disappear among the secluded recesses of the forest.

Early in September the females and the young of the year depart for the gulf states. The old males remain a week or two later than the others. At this time their notes are uttered in a desultory manner, and but a few times during the evening. The birds, however, seem very active, pursuing nocturnal insects and frolicking with each other. The remaining few move south in obedience to that occult edict which almost all our feathered friends observe.

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All are first-class in every respect. Name a few as second choice when ordering as frequently we get out of some. We never substitute unless absolutely necessary.

Am. Eared Grebe.....	\$ 15	Acadian Flycatcher.....	15	Summer Tanager.....	25
Cal. Murre.....	30	Sharp-tail Sparrow.....	35	Cliff Swallow.....	05
Herring Gull.....	30	Bachman's Sparrow.....	1 50	Loggerhead Shrike.....	10
Common Tern.....	10	Field Sparrow.....	05	Bells Vireo.....	15
Noddy Tern.....	50	Murre.....	30	Chest sid. Warbler.....	25
Booby Gannet.....	1 75	Western Gull.....	40	Mourning Warbler.....	3 50
Cinnamon Teal.....	35	Cabots Tern.....	40	Md. Yellow Throat.....	15
White Ibis.....	35	Sooty Tern.....	25	Amer. Redstart.....	15
Sora Rail.....	10	Dovekie.....	2 00	Brown Thrasher.....	05
Purple Gallinule.....	30	Least Tern.....	12	St. Lucas Thrasher.....	3 50
Black-neck Stilt.....	50	Pintail Duck.....	50	Cactus Wren.....	25
Texan Quail.....	10	Clapper Rail.....	25	Lomita Wren.....	75
White-front Dove.....	20	Florida Gallinule.....	12	House Wren.....	05
Mex. Ground Dove.....	50	American Avocet.....	50	Chickadee.....	15
Black Vulture.....	75	American Quail.....	10	Long-billed Msh. Wren.....	05
Swainson's Hawk.....	50	Mourning Dove.....	05	American Robin.....	05
Tex. Screech Owl.....	50	Ground Dove.....	30	Bluebird.....	05
Road-runner.....	30	Turkey Vulture.....	75	Rusty Song Sparrow.....	40
Belted Kingfisher.....	25	White-tail Hawk.....	1 25	Abert's Towhee.....	75
Flicker.....	05	Red-tail Hawk.....	60	Texan Cardinal.....	75
West. Nighthawk.....	50	Groove-bill Ani.....	1 00	Blue Grosbeak.....	40
Crested Flycatcher.....	12	Black-bill Cuckoo.....	15	Painted Bunting.....	12
Amer. Magpie.....	15	Golden-front Woodp'kr.....	50	Scarlet Tanager.....	25
Wood Pewee.....	15	Nighthawk.....	40	Barn Swallow.....	05
Cowbird-Lazybird.....	05	Scis-tail Flycatcher.....	10	Red-eye Vireo.....	10
Red-wg Blackbird.....	05	Phoebe.....	06	Hutton's Vireo.....	1 50
Meadowlark.....	10	American Crow.....	10	Parula Warbler.....	25
Baltimore Oriole.....	08	Northwest Crow.....	25	Ovenbird.....	25
Florida Grackle.....	10	Bronzed Cowbird.....	40	Yel. breast Chat.....	10
Boat-tail Grackle.....	15	Tricol. Blackbird.....	15	Mockingbird.....	05
St. Lucas House Finch.....	50	Orchard Oriole.....	05	Sennett's Thrasher.....	15
Lark Sparrow.....	05	Purple Grackle.....	05	Calif. Thrasher.....	20
Trails Flycatcher.....	15	Great-tail Grackle.....	15	St. Luc. Cac. Wren.....	1 00
West. Lark Sparrow.....	05	Vesper Sparrow.....	05	Bewick's Wren.....	25
Chipping Sparrow.....	05	Chest-col. Longspur.....	35	Parkman's Wren.....	15
St. Domingo Grebe.....	50	Little Flycatcher.....	25	Brown hd. Nuthatch.....	20
Amer. Herr Gull.....	30	Seaside Sparrow.....	25	Wood Thrush.....	06
Arctic Tern.....	10	Gambel's Sparrow.....	20	Western Robin.....	10
Roseate Tern.....	15	Song Sparrow.....	50	White eggs Bluebird.....	25
Audubon's Shearwater.....	1 50	Des. Song Sparrow.....	35	20 Tawny Owl.....	\$ 50
Brown Pelican.....	40	Heer. Song Sparrow.....	10	59 Blackbird.....	10
Shoveler Duck.....	50	Cardinal.....	05	70 Black Redstart.....	15
Wood Ibis.....	1 00	Rose-breast Grosbeak.....	15	79 Marsh Warbler.....	25
Killdeer.....	20	Sharpes Seedeater.....	1 00	87 Whitethroat.....	10
American Coot.....	10	Dickcissel.....	10	92 Willow Warbler.....	10
Scaled Partridge.....	75	Purple Martin.....	15	100 Gt. Titmouse.....	25
Chachalaca.....	75	Bank Swallow.....	05	115 Tree Pipit.....	10
White-wing Dove.....	20	White-eye Vireo.....	15	138 Spot. Flycatcher.....	10
Inca Dove.....	75	Yellow Warbler.....	05	139 Tree Sparrow.....	20
Harris Hawk.....	60	Cerulean Warbler.....	1 75	143 Greenfinch.....	08
Long-eared Owl.....	50	La. Water Thrush.....	50	163 Jackdaw.....	15
Great Horned Owl.....	1 00	Long tail Chat.....	15	173 Wryneck.....	15
Yellow-bill Cuckoo.....	15	Catbird.....	05	182 Martin.....	10
Red-head Woodpecker.....	08	Curve-bill Thrasher.....	15	198 Sapsucker.....	75
Red-shaft Flicker.....	10	Leontes Thrasher.....	2 00	204 Barbary Partridge.....	40
Texan Night Hawk.....	50	Carolina Wren.....	10	Redshank.....	25
Mex. Crest. Flycatcher.....	40	Bairds Wren.....	25	271 Wild Duck.....	30
Green Jay.....	1 50	Blue-gray Gnatcatcher.....	05	302 Gold wing Oriole.....	35
Pr. Horned Lark.....	25	West. House Wren.....	15	305 Mex. Cardinal.....	25
Dwarf Cowbird.....	10	Wilson's Thrush.....	12	309 Snapping Turtle.....	10
Blecolored Blackbird.....	10	Russet-back Thrush.....	15	55 Song Thrush.....	10
West. Meadowlark.....	12	Mt. Song Sparrow.....	25	65 Robin.....	10
Bullock's Oriole.....	10	Calif. Towhee.....	10	74 Blk. Tht. Wheatear.....	35
Bronzed Grackle.....	05	St. Lucas Cardinal.....	1 50	80 Sedge Warbler.....	10
Cass. Purple Finch.....	1 00	Black head Grosbeak.....	15	89 Orphean Warbler.....	25
Ark Goldfinch.....	10	Indigo Bunting.....	10	96 Common Wren.....	10

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XIX. NO. 4.

ALBION, N. Y., APRIL, 1902.

WHOLE NO. 187

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges," "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

No. 187 your subscription expires with this issue
190 " " " June, 1902
195 " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This April OÖLOGIST was issued April 10th.

Received 32 requests for sets of No. 375 from my last adv. W. H. BINGAMAN, Algona, Iowa.

COLLECTORS.—Send me your exchange list and get mine. Nothing but first class sets with full data handled by me. L. P. CHERRY, Giddings, Texas.

CLIMBING IRONS that generally sell for \$2 to \$2.50. To introduce my irons I will sell them for 75c per pair. JOHN H. MCGEE, Leavenworth, Kans.

SEND 15 Star or any Continental Tobacco Co. tags and receive 1 doz. best pipe cleaners made. FRANK JANKE, 17 N. Penn. St., Indianapolis, Ind.

NOTICE.—Let me book your order for fine sets of Krider's Hawk to be collected in April at 25c per egg. Many others as cheap. W. H. BINGAMAN, Algona, Iowa.

EXCHANGE.—Embryoes of small mammals in formal, for sets of western eggs from original collector. Many common ones wanted. F. SEYMOUR HERSEY, Lakeville, Mass.

WANTED.—American sets, with data. Will collect British and Icelandic sets, for sale or exchange if wants are stated. T. GORDON, Coresmalzie, Whauphill, Wigtownshire, Scotland.

STAMPS:—1851-1901 postage and revenue, 100, \$1.00. Revenues 2c to 50c, 12 for 10c; revenues 1c to \$1.00, 25 for 35 cts; revenues 1c to \$3.00, 40 for \$1.00. Address, W. R. SOUTHWORTH, Cooperstown, N. Y. L. box 45a. 187.

FOR SALE.—Private collection, 300 mounted birds at one-half list price. Blue Goose, \$5; Snow Goose, \$4; Albino Crow, \$10.50. Write your wants. All answered. GLEN RINKER, Unionville, Mo.

LADIES or GENTLEMEN can earn from \$5 to \$10 per day by working for us. Expenses guaranteed for those furnishing us with satisfactory reference. W. B. ELLIS, 1059 Third Third Ave., New York.

FOR EXCHANGE—8 by 10 portrait outfit, magazines, relics, fossils, curios, minerals etc., for 5 by 7 or larger camera. Also hand camera, lenses, burnisher, etc. R. M. DALRYMPLE, Baker Ohio. 188

STAMPS for Eggs. I will send 75 var. of U. S. stamps (catalogue about \$1.50) for every \$1 worth of sets sent to me at catalogue rates. Eggs may be of any species, but must be first class. J. B. NEWTON, Unionville, Ct.

FOR EXCHANGE OR SALE.—Dana's Manual of Geology; Elements of Botany, Bastin, Gray's New Lessons and Manual of Botany; Davies' Nests and Eggs, fourth edition, 52 copies Natural Science News, Eastman Pocket Kodak. Will sell cheap for cash or will exchange for A No 1 sets or mounted birds with data. W. A. AMON, 707 N. Main Street, Washington, Pa.

WANTED—Any of the following skins: Swallow-tailed Kite, Man-o-war Bird, Sooty Tern, Noddy, Greater Shearwater, Sooty Shearwater, Leach's Petrel, Wilson's Petrel, Passenger Pigeon, any of the large Hawks, Golden or Bald Eagles. All skins must be first class. Can give in exchange any of the following: Golden Eagle, mounted; Snowy Owls, mounted or skins; Loons, mounted; Game Birds, pair, mounted; Mallard, Sharp-tailed Grouse, Pinnated Grouse, Dusky Grouse, Ruffed Grouse, White-tailed Ptarmigan. These are in pairs and suitable for convex glasses. Want also, eggs in sets of Osprey, Hooded Merganser, Bonaparte's Gull. Can give in exchange sets of eggs listed in January and February OÖLOGIST. Orders taken for fresh skins and A 1 sets for spring collecting. CHRIS P. FORGE, Taxidermist and Collector, Carman, Manitoba.

FOR EXCHANGE:—A 1 sets with full data. Chickadee, Black Vulture, Am. Crow, Chuck willsowidow, Night Hawks and others, for revolver, 32 cal. Must be in good condition. S. C. RAGAN, J. M. C., Washington, Miss. 187.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrosities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

TO EXCHANGE.—Finely prepared specimens of the Marine Invertebrates, preserved in Formalin, for books, eggs or skins. These preparations are every one beauties and an addition to any collection. Full list for yours. No postals. C. C. PURDUM M. D., 128 Mineral Spring Ave., Pawtucket, R. I.

FOR SALE OR EXCHANGE.—Oak egg cabinet, containing 7 drawers, 18 by 20 inches, ranging from 1½ to 3½ inches deep. \$5 cash or \$15 worth of strictly A No. 1 sets L. H. PAUL, 105 Palmyra St., Newark; N. Y.

FOR EXCHANGE — Mounted specimens Snowy Owl; pair Wood Ducks; many smaller birds; fine sets of 4 each White Ibis and White-faced Glossy Ibis. I want eggs in sets; send list of what you can spare. Want all but commonest. Will pay cash for sets Humming birds, Osprey, Eagles; name your figure. ERNEST H. SHORT, Rochester, N. Y.

"THE COW PEA" is the title of the latest publication issued by the Experiment Farm of the North Carolina State Horticultural Society at Southern Pines, N. C. This book neatly bound and illustrated in plain and concise manner discusses the value and uses of this important crop, the Cow Pea. Every reader can get a copy free by writing to the Superintendent of Experiment Farm, Southern Pines, N. C.

FOR SALE CHEAP:—Choice southern sets with full and accurate data. American Oystercatcher, Chuckwills Widow, Night Hawk, Willet, Wilson's Plover, Royal Tern, Clapper Rail, Brown Pelican, Laughing Gull, Boat-tailed Grackle, Purple Martin, Green Heron. Painted Bunting, Yellow-breasted Chat, Indigo Bunting, Black Skimmer, etc. Southern Sea shore sets for collections, a specialty. List for stamp. DR. M. F. CLECKLEY, 457 Greene street, Augusta, Ga. 188.

COLLECTORS:—For every \$1.00 cash or \$3.00 worth of specimens, supplies, books, or anything the collector or sportsman can use, I will send you one of my new Auxiliary barrels for small bird collecting. They will fit any gun. Saves the price in powder and shot in a month, if you do any shooting. Give gauge of gun. C. C. PURDUM, M. D., 128 Mineral Spring Ave., Pawtucket, R. I.

EVERYONE Interested in natural science, and all who enjoy a good narrative, should read "Frederick Young." People have remained up until one, two and even three o'clock in the morning to finish it. Gold top; tinted illustrations; 401 pages; rich, dark green cloth binding, with sheet white enamel lettering, and a beautiful black and light green cover design by Frohn. Superlative as a gift. Publishers' price, \$1.50. Sent by mail prepaid for \$1.25. CHARLES L. PHILLIPS, Taunton, Mass. 11

Rare Arctic Birds Eggs FOR SALE.

I have just received the finest collection of Arctic Birds eggs that has come down south since McFarlane returned from the Anderson River region 35 years ago. These sets were collected at Herschel Island and Mackenzie Bay, Arctic America. Here is a partial list of sets: Greater Snow Goose and skins, Lesser Snow Goose, White-fronted Goose, White-cheeked Goose, Brant, Surf Scoter, King Eider, Snowy Owl, Great Grey Owl, Hawk Owl, Northern Raven, rare sets of Ducks, Baird's Sandpiper, Buff-headed Sandpiper, Northern Phalarope, Willow Ptarmigan, Rock Ptarmigan, Snowflake, nest and skins, Lapland Longspur and skins, Smith's Longspur and skins, rare Gulls, Hoary Redpoll, nests and skins, Tree Sparrow, nests and skins, Fox Sparrow, nest and skins, Intermediate Sparrow and nest, Orange-crowned Warbler and nest, Whistling Swan. Send for prices to W. RAINE, Kew Beach, Toronto, Canada.

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(BLACK HALIOTIS.)

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Send for one at once, and receive list of a few other good things I have.

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127 West 23d Street,

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The following eggs are offered at greatly reduced prices. Each specimen is blown through one hole in the side, and all will be correctly numbered to correspond with my "Manual." All specimens will be carefully packed in cotton and sent prepaid by mail or express. Orders under one dollar at list prices. For orders over one dollar I offer the following discounts:

For \$1.00 you may select to the amount of \$1.75.

" 2.00	" " " "	" " 4.00.
" 3.00	" " " "	" " 7.00
" 4.00	" " " "	" " 10.00
" 5.00	" " " "	" " 13.50

Orders of ten dollars and over at one-third of prices in this list. We cordially invite your patronage and assure you of satisfaction.

All are first-class in every respect. Name a few as second choice when ordering as frequently we get out of some. We never substitute unless absolutely necessary.

Am. Eared Grebe.....	\$ 15	Acadian Flycatcher.....	15	Summer Tanager.....	25
Cal. Murre.....	30	Sharp-tail Sparrow.....	35	Cliff Swallow.....	05
Herring Gull.....	30	Bachman's Sparrow.....	1 50	Loggerhead Shrike.....	10
Common Tern.....	10	Field Sparrow.....	05	Bells Vireo.....	15
Noddy Tern.....	50	Murre.....	30	Chest sid. Warbler.....	25
Booby Gannet.....	1 75	Western Gull.....	40	Mourning Warbler.....	3 50
Cinnamon Teal.....	35	Cabots Tern.....	40	Md. Yellow Throat.....	15
White Ibis.....	35	Sooty Tern.....	25	Amer. Redstart.....	15
Sora Rail.....	10	Dovekie.....	2 00	Brown Thrasher.....	05
Purple Gallinule.....	30	Least Tern.....	12	St. Lucas Thrasher.....	3 50
Black-neck Stilt.....	50	Pintail Duck.....	50	Cactus Wren.....	25
Texan Quail.....	10	Clapper Rail.....	25	Lomita Wren.....	75
White-front Dove.....	20	Florida Gallinule.....	12	House Wren.....	05
Mex. Ground Dove.....	50	American Avocet.....	50	Chickadee.....	15
Black Vulture.....	75	American Quail.....	10	Long-billed Msh. Wren.....	05
Swainson's Hawk.....	50	Mourning Dove.....	05	American Robin.....	05
Tex. Screech Owl.....	50	Ground Dove.....	30	Bluebird.....	05
Road-runner.....	30	Turkey Vulture.....	75	Rusty Song Sparrow.....	40
Belted Kingfisher.....	25	White-tail Hawk.....	1 25	Abert's Towhee.....	75
Flicker.....	05	Red-tail Hawk.....	60	Texan Cardinal.....	75
West. Nighthawk.....	50	Groove-bill Ani.....	1 00	Blue Grosbeak.....	40
Crested Flycatcher.....	12	Black-bill Cuckoo.....	15	Painted Bunting.....	12
Amer. Magpie.....	15	Golden-front Woodp'k'r.....	50	Scarlet Tanager.....	25
Wood Pewee.....	15	Nighthawk.....	40	Barn Swallow.....	05
Cowbird-Lazybird.....	05	Scis-tail Flycatcher.....	10	Red-eye Vireo.....	10
Red-wg Blackbird.....	05	Phoebe.....	06	Hutton's Vireo.....	1 50
Meadowlark.....	10	American Crow.....	10	Parula Warbler.....	25
Baltimore Oriole.....	08	Northwest Crow.....	25	Ovenbird.....	10
Florida Grackle.....	10	Bronzed Cowbird.....	40	Yel. breast Chat.....	10
Boat-tail Grackle.....	15	Tricol. Blackbird.....	15	Mockingbird.....	05
St. Lucas House Finch.....	50	Orchard Oriole.....	03	Sennett's Thrasher.....	15
Lark Sparrow.....	50	Purple Grackle.....	05	Calif. Thrasher.....	05
Trailis Flycatcher.....	15	Great-tail Grackle.....	15	St. Luc. Cac. Wren.....	1 00
West. Lark Sparrow.....	05	Vesper Sparrow.....	05	Bewick's Wren.....	25
Chipping Sparrow.....	05	Chest-col. Longsour.....	35	Parkman's Wren.....	15
St. Domingo Grebe.....	50	Little Flycatcher.....	25	Brown hd. Nuthatch.....	20
Amer. Herr Gull.....	30	Seaside Sparrow.....	25	Wood Thrush.....	06
Arctic Tern.....	10	Gambel's Sparrow.....	30	Western Robin.....	10
Roseate Tern.....	15	Song Sparrow.....	50	White eggs Bluebird.....	25
Audubon's Shearwater.....	1 50	Des. Song Sparrow.....	35	20 Tawny Owl.....	\$ 50
Brown Pelican.....	40	Heer. Song Sparrow.....	10	59 Blackbird.....	10
Shoveler Duck.....	50	Cardinal.....	05	70 Black Redstart.....	15
Wood Ibis.....	1 00	Rose-breast Grosbeak.....	15	79 Marsh Warbler.....	25
Killdeer.....	20	Sharpes Seedeater.....	1 00	87 Whitethroat.....	10
American Coot.....	10	Dickcissel.....	10	92 Willow Warbler.....	10
Scaled Partridge.....	75	Purple Martin.....	15	100 Gt. Titmouse.....	25
Chachalaca.....	75	Bank Swallow.....	05	115 Tree Pipit.....	10
White-wing Dove.....	20	White-eye Vireo.....	15	138 Spot. Flycatcher.....	10
Inca Dove.....	75	Yellow Warbler.....	05	139 Tree Sparrow.....	20
Harris Hawk.....	60	Cerulean Warbler.....	1 75	143 Greenfinch.....	08
Long-eared Owl.....	50	La. Water Thrush.....	50	163 Jackdaw.....	15
Great Horned Owl.....	1 00	Long tall Chat.....	15	173 Wryneck.....	15
Yellow-bill Cuckoo.....	15	Catbird.....	05	182 Martin.....	10
Red-head Woodpecker.....	08	Curve-bill Thrasher.....	15	198 Sapercallie.....	75
Red-shaft Flicker.....	10	Leconte's Thrasher.....	2 00	204 Barbary Partridge.....	40
Texan Night Hawk.....	50	Carolina Wren.....	10	Redshank.....	25
Mex. (rest. Flycatcher.....	40	Bairds Wren.....	25	271 Wild Duck.....	30
Green Jay.....	1 50	Blue-gray Gnatcatcher.....	05	302 Gold wing Oriole.....	35
Pr. Horned Lark.....	25	West. House Wren.....	15	305 Mex. Cardinal.....	25
Dwarf Cowbird.....	10	Wilson's Thrush.....	12	309 Snapping Turtle.....	10
Bicolor Blackbird.....	10	Russet-back Thrush.....	15	55 Song Thrush.....	10
West. Meadowlark.....	12	Mt. Song Sparrow.....	25	65 Robin.....	10
Bullock's Oriole.....	10	Calif. Towhee.....	10	74 Blk. Tht. Wheatear.....	35
Bronzed Grackle.....	05	St. Lucas Cardinal.....	1 50	80 Sedge Warbler.....	10
Cass. Purple Finch.....	1 00	Black head Grosbeak.....	15	89 Orphean Warbler.....	25
Ark Goldfinch.....	10	Indigo Bunting.....	10	96 Common Wren.....	10

"You might as well be out of the Bird World altogether as go without THE OSPREY."

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K. B. MATHES, Batavia, N. Y.

Audubon Magazine. Vol. I No. 3 (Apr. '87); Vol. II Nos. 2 and 8 (Mch. and Sept. '88). Oregon Naturalist. Vol. III No. 10 (Oct. '96). The Oologist Advertiser. Vol. I No. 1 (Aug. '90). Bulletin of the Cooper Ornithological Club. Vol. I No. 3 (May-June '99).

Bulletin of the Michigan Ornithological Club. Vol. III No. 3 (July '99) to date.

The Nidologist. Vol. I Nos. 1, 2 (Sept.-Oct. '93) and 6 (Feb. '94).

The Osprey. Vol. I Nos. 2 and 4 (Oct. and Dec. '96); Vol. III No. 8 (April '99).

The Taxidermist. Vol. I Nos. 5 (Nov. '91) and 11 (May '92).

Oregon Naturalist. Vol. III No. 10 (Oct. '96). The Iowa Ornithologist. Vol. II Nos. 2 and 4 ('96); Vol. III Nos. 2 and 3 ('97).

The Ornithologist and Oologist. Semi-Annual. Vol. I No. 1 (Jan. '89).

The Journal of the Wilson Ornithological Chapter of the Agassiz Association. Vol. I No. 2 ('93).

Random Notes on Natural History. Vol. III Nos. 6, 7 and 11. (June, July, Nov. '86).

The Oologist. July-Aug. '86, Jan. '87, Aug-Sept. '88, Dec. '97.

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TAUNTON, MASS.

THE OÖLOGIST.

VOL. XIX. NO. 3.

ALBION, N. Y., MARCH, 1902.

WHOLE No. 186

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMV.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and Items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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Field Notes From Manitoba.

MORE ABOUT LOONS.

In my last paper in the Oölogist I promised its readers my 1901 experience with the Loons, so I sit down today to

put into readable form the notes made last June.

On the 19th, I loaded up my boat and left home at 2:30 p. m. to try my luck at the Loon's rendezvous. At 9 p. m. I drew rein before Mr. A's house, and we talked till 1:30 a. m. making our plans for the morrow. In 1900 we only visited two lakes, this time I was determined to visit all the lakes I knew of, so we made our plans and then retired.

June 20th, up bright and early. The warblers, Robins, etc were filling the woods with their melody. At 7:30 a.m. started for what is known to me and other readers of the Oölogist as Loon Lake, where we got the set taken last year. Here we found nothing, but examined the nest, from which Mr. A had taken a set of two Loon eggs on the 9'h inst. almost hatched, and had badly chipped the holes in blowing, or more correctly speaking extracting the downy young. He gave me this set, but I had the misfortune to let one drop and of course it came to grief. This nest was like all nests found on this lake, simply a pile of bay moss brought up from the bottom of the lake and formed into a cone like pile. The nest was much the same size as the one of last year, and quite near the same place in about 2 feet of water. We searched the lake here carefully, but found no sign of the second nest and the Loons seemed to have left the pond for this season. We found nothing here and and only saw a brood of young Mallard Duck and a few Blackbirds and Black Tern So we left this lake and drove on to the other lake about two miles east, known as Bosey's Lake, which we had visited last July, here we saw a

pair of Loons, as we approached they laughed derisively at us, and by the time we had launched the boat, they had hidden themselves in the reeds and rushes at the south end of the lake, and we saw them no more. We thoroughly explored the lake and the island in the middle, but found no Loon's nest.

We found three nests of Holboell's Grebe. One empty, one with three, and one with four eggs in. One nest was a mass of small water weeds, reed stalks and mud and the other was of water-lily roots, leaves and mud. The first nest was in open water, about midway between the lake's east shore and the island. The other was close to the edge in tall reeds and the water was only a few inches deep. Yellow-headed and Red winged Blackbirds were plentiful, and I got a set of four Red-winged on the island, the nest being woven to the tall reeds of last year's growth, about three feet up and very neatly made of coarse grass, woven strongly together and lined with fine grass. I also found a few nests of the Yellow-head, but all were empty. The nest of this species is much deeper than Red-wing and generally placed higher up. We also saw several pairs of Killdeer and young and many Ducks, most of them with broods, but these we did not disturb. I was struck by the absence of waders, which last July were represented by Coot and Semi-palmated Sandpiper, Wilson's Phalarope and Lesser Yellow legs. It was now past noon, so we ate our lunch, then packing our boat started for a large chain of lakes, covering several acres of land, quite a long way to the northwest of this one. After a long and tedious trip, traveling most of the time through scrub timber and hay marsh without a road, we reached our destination about 5 p. m. Then there was so little of the day left we decided to reconnoitre, and find out the best way to get to the water on the lakes on

the following day when we would have time to thoroughly explore these large and likely looking sheets of water. We left our horse and rig at some distance from the lakes, in the woods where the bulldog flies were least plentiful, and I taking my gun we started over the shaky marsh sod toward the smallest lake of the three. As we neared the reed bound edge of the lake the well known laugh of the Loons as they answered each other sounded in our ears. Though the sod was very treacherous, we, by picking our way carefully managed to reach the edge of the water I struck the south end while I made a point about half way down the east side. As I parted the reeds I beheld a fine pair of Loons quite close to me, but as soon as they saw me they dove to reappear at the other side of the lake far out of gun shot. However, unlike any loons I had previously seen they positively refused to leave the lake, even though we did our best to frighten them off. We both searched the margin of the lake carefully, and the reeds as far back as there was any water, but we failed to find any sign of nest or young, although I firmly believe that they had either one or the other there, finally when we could find no nest I decided I would try for one of the birds and secreting myself at the north end of the lake in the tall thick growth of rushes I hid, while A. took his pole and went to the other end of the lake to try and drive the Loons down. As soon as they saw the man with the pole traveling their way they dove and came to the surface within about 100 yards of me. At a move of the stick they dove again and rose nearer me, but it took a great deal of patience to hold to my hide, pestered as I was with innumerable mosquitoes till at last they ventured within gun range, I fired, and succeeded in wounding one, but it dove again, only to reappear closer than

before, I was ready and gave it the other charge, striking it in the head and it slowly drifted toward my side, where within reach of the bank I pulled out the finest Loon I ever saw. The reports of my gun had scared up many water fowl, and amongst the rest we counted nine Loons, but the one left on the lake whose mate I had shot still clung to his aquan retreat like "grim death to a dead tiger." It was now almost dark and we were 8 or 10 miles from home and did not know the way very well, we left the lakes, hitched Billy and started for home, which we reached between 11 and 12 p. m. and promptly tumbled into bed.

June 21st. We slept sound after the hard work of yesterday and it was 7. and the sun well up before we awoke, but with all possible haste, we swallowed our breakfast and was off for the field again. A substantial lunch and jug of good home brewed ale, not being the least acceptable part of our outfit, for we booked to make the best of the day. The sun was hot, the sky cloudless and the weather dry. We took the old Indian trail, so as to make the best of the time, and many a fence we had to pull down and replace again before we reached the large hay marsh in which the lakes we sought were situated. Old Billy did his part well and by 9 a. m. we were beside the large lake where we intended to spend our forenoon. We set up our boat and carried it from the buggy to the water's edge about one-half a mile distant and on the other side of the tract, and as we pushed it into the water I flushed from her nest of 12 eggs, the first Sora Rail I had disturbed this season. I transferred the set to one of my boxes, jumped into the boat and we pushed off. The water was as smooth as a gigantic sheet of glass and at a distance we could see Coot's, Grebes, Ducks and two pair of Loons swimming on the surface. We found Holbøll's Grebe plentiful, and

found several nests, containing sets and partial sets of from 1 to 6 eggs. One of these nests, the only one I need mention especially was made of nothing but roots, stalks and leaves of water lilies, It was a large floating structure in the middle of a lily patch, and was three and a half feet in outside diameter, while the six eggs which it contained were almost one-half sunken in water. The bird must have left the nest as we approached, although we did not see her, for the eggs were warm and uncovered which sets of grebes usually are not. When blown they proved to be pretty well incubated. While we coasted along the shore, we found a number of nests of Red-winged Blackbirds, but most of these had young, I got a few choice sets however, but as we boated a long narrow spur of the lake, the familiar cry of the Sandhill Crane sounded in our ears and we put for the shore, near where the sound came from. I took my gun and started to hunt the heavy end patches in the vicinity, while A. paddled along the shore. After considerable search I flushed the female crane, but could find no nest. She flew off and joined her mate, some 100 yards distance on the prairie. I watched them for some time, and then went back to the shore of the lake. As I broke through the belt of reeds A. informed me he had seen a young crane and showed me where it had disappeared in the reeds. I quickly followed but saw nothing of it till I got through the reeds, I glanced around but could see no young crane. But I noticed a female Red-winged Blackbird making dashes every now and then at a place in the long, marsh grass, I ran forward to investigate and found the cause of the commotion was the young crane, who was squated down on top of an old hay coil that had not been drawn away last year. I quickly captured him, and took him to the boat where Admy awaited me. He

had, while I was away after the Crane's, found a Loon's nest with two eggs in it. The nest appeared deserted, and the eggs cold. This nest was in a different location from the others we had found, being placed on the shore of the lake, in a little channel cut by musk rats. The nest was simply a place flattened in the grass, and a few pieces of reed brush cut by musk rats while feeding, were laid round the two eggs to keep them from rolling. They showed the same general appearance as others I had taken. I might here mention that about two week's previous to this I had brought to me a Loon to mount, which upon dissection proved to be a female. She was shot on this same sheet of water, and from the deserted appearance of the nest the fact that the embryo in the incubated egg was decomposed somewhat, the other being addled. I concluded that these two eggs belonged to the shot bird. We thoroughly searched the lake, but found no more Loon's eggs and after dinner carried our boat to the largest lake of the three and proceeded to search it. There was a pair of Loons on this lake, and two young as we afterwards found. On the south side of the lake, in a place exactly like the last one we had found, we located the nest, but we were too late. There was nothing but broken shells; the birds had escaped. We followed the old birds and got close enough to see the little ones, which were about two weeks old to judge by their size. This lake seemed very bare of life, for with the exception of a few Black Tern in their everlasting hunt after flies, a Coot and a few Blackbirds, it appeared to be devoid of specimens. We drew the boat alongside the shore and returned to the buggy. The only other find worth recording was that of a Virginia Rail's nest. Built in the thick reeds on the side of the small lake, where I shot the Loon the day previous, it was woven to

the reed stalks, was just above water level and in about nine inches of water. The old birds made a great fuss as I approached it, and I was surprised to find it empty. Further search however revealed a small lump of fine glossy black down, with a pair of small sparkling eyes and a little pinkish white bill, and I knew then what had caused all the commotion. Mr. and Mrs. Rallus resented my intrusion into their private domain. I did not look for more after taking a good look at my wee captive. I placed him tenderly back in his cradle and left him there. We found old Billy quite ready for us. The sun had set and we must make all haste home, so we loaded our outfit, and finished our ale and in 15 minutes were leaving behind for this season, the habitation of the Loon. Next year I hope to give the readers of the OÖLOGIST some more notes on this interesting bird. I gave the young crane to Mr. A as his share of the plunder, and today he is a fine, almost full grown fellow and bosses the ranch. At some future date I hope to give my readers a history of Sandie's doings in captivity.

CHRIS P. FORGE,
Carman, Manitoba.

A Novice's Note-book. No. 2.

June 3, 1881. Got several eggs of the Barn Swallow, generally four in each nest, but not more than that number. Several nests contained young. The eggs are whitish, thickly spotted with reddish brown.

Also eggs of the Red-headed Woodpecker, nest in an old decayed apple tree; four eggs in the nest, pure white, somewhat smaller than Dove's eggs. (I had never heard of measusing eggs in those days. P. M. S.)

Also eggs of the Catbird, nest in hedge, and contained two eggs, bright green. (Observe the primitive simplic-

ity of the data in those good old days. And yet those eggs were good traders. How very exacting are some of the modern fellows who want "full and complete data, written in ink.")

Also nest of the Kingbird, in apple tree, two eggs, which are white, spotted with brown.

June 5. Saw several Gray Plovers (Bartramian Sandpiper) sitting around in cornfields. Quail (Bob-white) are common along the roads, as well as young rabbits.

June 7-11. Went on a fishing excursion to Clear Lake and Illinois River (in an adjoining county.)

June 11. Virden Ill. Found a nest of the Mockingbird, containing four young. (This was the genuine *Mimus polyglottus*, which is still found sparingly as a summer resident of the locality. P. M. S.) I brought the young home. When I was taking them from the nest, both old ones flew at me, making a great noise. The nest was in a low, thorny bush, about three and a half feet from the ground, and set in the thorns. It was composed of sticks and lined with fibers, like the nest of a Brown Thrush. This is the first nest of the Mockingbird I ever saw. (The young turned out to be a female and three males. I put them in the care of a barber, who affected the rearing of such creatures. One male survived, which was sold for five dollars when it reached majority. The songster was sold on credit, and we still have five dollars a-coming. However, that was not the only time I have been buncoed in my collecting experience, so let it pass. P. M. S.)

June 13. Found a Garden Oriole's nest in an apple tree in an orchard. It contained young, about a week old. This is one of the prettiest and most curious nests I ever saw. It is composed of long dried grasses, woven together in a wonderful manner into a basket, and fastened to the small twigs

so as not to swing loosely, like the Baltimore Oriole's.

Also found a nest of the Red-winged Blackbird, containing four eggs. The nest was in an apple tree. (My acquaintance with *Agelaius phoeniceus* Linn., began in an orchard away from water, and it then seemed perfectly natural for me to find it nesting there. However, I have since learned that it was rather unusual.)

Also found a nest of the Wood Pewee. It was in an apple tree, set upon a horizontal branch, one of the lowest. It was a very pretty little nest, composed of hair, fibers and feathers, woven together into a cup. Four eggs, of a very light yellowish color, with a few spots of brown. This interesting little bird sits upon a stake or limb of a tree for hours at a time. (The foregoing broad generalization was not warranted by observation. P. M. S.) When it sees an insect, it flies forward, seizes it and returns to its perch, to repeat the operation as soon as an opportunity presents itself.

To-day I found a nest of the Phoebe in a well. The nest was in a niche of the brick wall, where a brick had been displaced, about ten feet (not up) from the wooden box enclosing the opening. The nest contained young birds. The well had water in it, and was used every day, water being drawn up by means of a rope over a pulley. This seemed to me a curious place for a bird's nest.

June 15. Found a nest of the "Rain Crow," or Yellow-billed Cuckoo. It was in an apple orchard, and was composed of a few sticks and fibers, loosely laid together, and contained two young about two weeks old.

Saw a garter snake trying to make a meal off a young Meadow Lark about half grown. The snake was about two feet long. It had the bird by one wing, which it had nearly swallowed. The bird was fluttering and crying at a

great rate, and vainly trying to escape.

June 16. Catbird's nest, four eggs, nearly hatched.

June 20. Nest of Red-winged Blackbird in hedge, contained four eggs. Nest made of grass. (Another instance of the nesting of this species regardless of the vicinity of water. P. M. S.)

Found a Wren's nest in a mortise in a post. It contained seven eggs. I took four eggs, and after a few days I went back and found the Wren had laid another egg, and still kept incubating.

Found a nest of the Orchard Oriole in an apple orchard. It contained four eggs, rather fresh.

June 21. Found two small nests, one of them in an apple tree and the other in a maple tree on the street. Both contained young nearly grown. Nests were composed of hair and soft materials woven into a cup, and suspended from the outer twigs. Added later: Since the above note, I have seen several suspended in the maple trees along the streets. I think they are a species of the Vireo, but am not certain. Very pretty little nest, the prettiest I ever saw.

June 23. Nest of Orchard Oriole in apple orchard, three eggs. Nest suspended between upright twigs. Also nest of Brown Thrush, containing four eggs, in a hedge.

July 9. For two weeks past the Indigo Bird has been sitting upon the highest limbs of apple and maple trees, upon the very highest point, singing its pleasing song. They are very common now.

A boy in town found a "Rain Crow's" nest (Yellow-billed Cuckoo) this last week in the public park, containing four eggs, rather light blue color.

July 10. Nests of Turtle Doves with fresh eggs quite common. I found sev-

eral to-day. They are evidently a second brood.

Found a nest of the Wood Pewee (a mistake, no doubt Traill's Flycatcher, *Empidonax trailli*. P. M. S.) in a hedge upon a high branch, containing three eggs, embryos almost developed.

July 17. Jacksnipes (Wilson's Snipe, *Gallinago delicata*) common in a portion of low, wet meadow. First time I ever noticed them at this time of year in this locality.

(That evening I called on a noted sportsman in the neighborhood, and told him that I had found a colony of Jack Snipe. He rather ridiculed me for mistaking some other species for the well known game bird. I insisted that I was correct, and directed him to the place, as he finally said he would go out and investigate. Passing his house the following evening, I saw him on his back porch, giving himself a thorough scrubbing before going within, and I immediately conjectured that he had been out hunting. Calling to him I inquired if he had been hunting. He admitted that he had. "Find any Jack Snipes?" I asked. "Yes, a few," he replied. "How many did you get?" I queried. "Twenty-one." You may be sure I had Jack Snipe for breakfast next morning.

July 21. Jack Snipes have all disappeared, only a solitary one seen this evening. (The cause of their disappearance was clearly traceable to the best wing shot in town, acting upon information given by a young fellow who had nothing to do but ramble about the country from morning till night.)

Doves very plentiful. They are beginning to flock together, and are very numerous along the edges of the ponds.

July 23. Yesterday I saw quite a curiosity, a Robin with a white spot on each wing. It was flying about in a pasture.

July 27. Again I saw the Robin with

white wing-spots. The secondaries are white, as I could plainly see.

July 30. Saw a Blue Heron on Crane's pond, about five o'clock p. m. When it flew up on my approach, a number of Blackbirds (Bronzed Grackle) began to fly down upon it, and to fight it. When it alighted they let it alone.

Also saw some Green Heron on Sugar Creek.

Blackbirds are beginning to flock together.

August 2. Again I saw the albino Robin flying about.

August 22. A large flock of Barn Swallows are roosting in a large hollow cottonwood near Crane's pond. (This note doubtless refers to the Chimney Swift. P. M. S.) Largest flock I ever saw.

Also saw a very large flock of Turtle Doves. They were on the edge of a pond near a cornfield. Most that I ever saw at one time.

Nighthawks have been flying about for a week. They begin to fly over for about an hour before dark, and also fly about an hour after day begins to dawn.

P. M. SILLOWAY.

The Catbird's Nest.

For several years past a pair of Catbirds (*Galeoscoptes carolinensis*) have nested in a hedge of Osage Orange near the home of the writer. The present season, 1899, they succeeded so well in hiding their nest that for a long time I was unable to find it. They frequented the house morning, noon and night and sang me their sweetest songs, but, watch them as I would, I could not discover their treasures. However, on the 8th of July about noon, while at some distance from the hedge, I saw the male enter it, carrying a large earth worm. He hopped along from bush to bush. I followed cautiously, and about fifty

feet from where he entered the hedge I found the nest.

The nest contained one young bird almost fledged. Both parents objected vociferously to my intrusion. The female had been near guarding her nest, so I made my stay short, but kept an eye on the nest during the next week. When the birds were done with it, I lifted it from its concealment to study its structure.

The nest was not built in the fork of a limb, but rested on the side of an Osage shrub inclined at an angle of forty-five degrees and was supported by several strong contiguous twigs. The nest itself was of peculiar structure. It consisted of two distinct parts. The first was formed mostly of the small thorny twigs of the Osage Orange (*Maclura aurantiaca*) without doubt gathered from the hedge in which it was built. Interwoven among these things was a common wrapping string of considerable length. On the upper portion were several pieces of grapevine bark. This first part of the nest was completely covered with a sheet of heavy manila paper. This was all in one piece and was so shaped as to conform nicely to the outer margins of the nest.

The second part, or nest proper, was built almost entirely of excelsior. This was lined with the fine root fibers of some species which I was not able to identify. The nest was well made and exhibited no small degree of ingenuity.

W. HENRY SHEAK,
Peru, Ind.

Peculiar Nesting Sites.

One of the most peculiar nesting sites that has come under my observation was one of the Parula Warbler. The nest was built in an old nest of the Wood Thrush, that was built in a beech about twenty feet high, and had been used the previous year by a pair of

Thushes. The nest had been repaired and lined with a new lining of bits of hair and feathers of a thickness to make the inside diameter not more than an inch and three quarters, while that of the outside was the same as in the average nest of the Wood Thrush.

The three eggs that the nest contained were so far advanced in incubation that they could not be saved. The nest was also destroyed, an act that I regret very much.

R P SMITHWICK,
LaGrange, N. Car.

Seeing several articles in the Oölogist on the subject of "Queer Nesting Sites" I will tell you my experience. One day I noticed a House Wren working very busily carrying nest materials. As I had no eggs of this species in my collection, I watched her to find where the nest was, but do my best I could not find it. Well, that night mother went to take in the clothes from the line and we then found the wren's nest in a shirt sleeve. How is that for a queer site?

Last year on going to the machine shed I discovered that a Robin had built her nest on the reel lever of the binder and this year she has built one in the same place.

My mother tells me of finding a nest and a young bird in a sheep's skull. The bird had carried the nest material in at the eye holes of the skull.

CZAR S. GOODELL,
Fostoria, Mich.

Notes on the Mourning Dove.

One day last spring (1901) while collecting in Oakland County with a friend he suddenly explained "here's a Ground Dove's nest!" It was that he was excited rather than ignorant that made him make this statement, for the bird he said, rose up but a couple of feet in front of him. As I was watching a distant hawk I did not see the parent bird rise up, but soon arrived at the

spot to find two young of the *Zenaidura macroura* about three days old. This is the first time we ever found this species nesting on the ground.

The nest, if there was enough of it to call it by that name, was composed of a few straws and was placed between two rows of black-berry bushes. What seems peculiar to me is, why this pair should nest on the ground in this locality, when there were woods of all descriptions on every side. Besides there are marshes in the locality which contain many snakes, of which the young were apt to fall prey. The Mourning Dove is a common summer resident in this part of Michigan, a few stay with us during the winter, at which time they stay in flocks and are quite wild.

A. W. BLAIN, Detroit, Mich.

First Takes of the Season.

From a recent letter from the Hon. John Lewis Childs, we take the following:

During a short hunting trip in the vicinity of the Miakka river, in the southern portion of Manatee county, Florida, I was fortunate in securing the following prime sets:

Feb. 14th. 1-3 Ward's Heron; 2-4 Ward's Heron; 3-4 Ward's Heron.

Feb. 15th. 1-2 Sandhill Crane; 1-2 Florida Barred Owl.

The latter set I particularly desired, as I have never been able to procure it through any dealer or collector. I was also fortunate in getting both of the parent birds, the female being upon the nest and the male in a tree near by.

The set of Sandhill Crane was taken from a nest in the middle of a small, clear-water pond, surrounded by a small quantity of dead grass. The water was not more than 18 inches deep, and the grass nearby had been broken off for constructing the nest. The eggs were completely exposed and could be seen for considerable distance.

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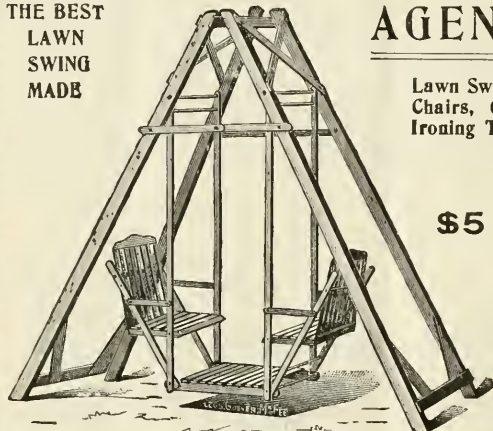
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A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XIX. NO. 5

ALBION, N. Y., MAY, 1902.

WHOLE NO. 188

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges," "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

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190 " " " " June, 1902
195 " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This May OÖLOGIST was issued June 30th.

WANTED.—To purchase relics, old firearms, antiques, fractional currency, curios, fossils, medals, collections of stamps, etc., etc., for my private collection. No postals answered. STEPHEN VAN RENSSELAER, JR., West Orange, N. J.

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THE OÖLOGIST.

VOL. XIX. NO. 5.

ALBION, N. Y., MAY, 1902.

WHOLE No. 188

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
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By C. C. PURDUM, M. D.

During my ornithological observations, I have met these birds at many points and in many localities along the coast, and I have been deeply interest-

ed in their movements and habits. During the winter of 1901 I spent some time at Robinsons Hole, Mass. This is the name of a channel of rapidly flowing water between the islands of Naushou and Pasqui; these two islands being part of a chain which extends in a general easterly and westerly direction, and separate the waters of Buzzards Bay from those of Vineyard Sound. During the ebb and flow of the tides the waters flow between these two islands with fearful rapidity and the difference between the watermark at low and high water is great. This great rise and fall of tide is in great measure responsible for the development of large beds of shell fish called "muscles" by the natives. The food of these mollusco depends upon the amount of water passing, and consequently in rapidly flowing bodies of water they develop in large numbers. Upon these the White-winged Scoter (*Oidemia deglandi*) subsists, and therefore all other things being equal, the larger the development of "muscle beds," the larger number of Scoters in the locality. During my stay at the above locality I was asked by one of the natives, "Why do these birds make regular trips from the Sound to the Bay and *vice versa*?" The reason is very apparent. Food supply governs most of the actions of all birds, if we leave the breeding habits, and even then the question of food has great influence upon the nesting sites. Now as it is "low tide" in the Bay when it is "high tide" in the Sound, and *vice versa*, and the feeding grounds can of course be utilized better at low water than at high, the birds pass from the beds of one locality to the other with the change of tide, and of course are

always going from high water side. Careful observations have served to fully confirm this, and I have found that the first stragglers began to pass a given point midway between "the Bay" and "the Sound" at about "half tide" and from that time until "dead low water" a steady stream of singles, pairs and flocks of Scoters would pass in one direction, viz toward low water. The height at which these birds fly is very variable. With a very high wind they seldom fly more than sixty feet above the water, but in a calm or with very light wind, the distance of the flights from the water is very variable. The flight is strong, steady, and at times very rapid. The maximum speed that they are capable of making under favorable conditions, viz, a heavy and favorable wind, I should judge to be about one hundred miles an hour, although this may be a trifle high. At any rate they do not fly as rapidly as some of the other ducks, as for instance the Canvas-back (*Aythya rallisneria*) or Old-squaw (*Clangula hyemalis*). It is a very interesting sight to watch them feeding, as they swim about by thousands over the "beds" above mentioned. I have sat upon a neighboring bluff with my binocular for hours and watched the ever changing kaleidoscopic panorama, as first one and then another disappears under the surface to reappear in a short time with one of the "muscles," which they swallow whole without cracking the shell in any manner. The walls of the stomach of these birds are of extraordinary thickness and the shells are ground up into very minute particles before passing into the intestines.

The manner in which these birds detach the mollusks from the beds has been the subject of some conjecture by observers in the past. I am of the opinion that both the bill and feet are used in this process, for the following reason: I have seen the birds (while

watching them through the glass) come to the surface with the "muscle" in the bill and swallow it almost immediately after; I have also observed them come to the surface with nothing in the bill and after a moment's rest dip the bill and head under water and get a "muscle" from somewhere and quickly swallow it. In the latter case the bird must have come to the surface with the mollusk in its feet. I can not state whether the birds ever swallow the food under water, but as they are capable of remaining under water for a great length of time, I would suppose that at times they did swallow it before coming to the surface. This must be the exception however.

The Scoter begins to arrive in this locality about the 1st to the 10th of November. The Spring migration toward the North begins about the middle of March, but is not complete until late in May, when the heaviest flight takes place. At this time the birds congregate in great flocks and move toward the breeding grounds which may be roughly stated as extending from as far north as Labrador and as far south as the Devil's Lake region of N. Dakota (see "Auk," April 1902.) The Scoter is a very late breeder, most of the eggs being deposited in the latter part of June, although Audubon found them breeding in Labrador as early as the 1st. The eggs vary in shading from green to pale buff, and seven is the largest number I have personally seen in one set, although sets of twelve and fourteen are reported. An interesting fact about the nesting habits of this bird is, that its eggs have been found in the nests of other birds, viz, in those of the Baldpate and Lesser Scaup Duck. ("Auk," April 1902, p. 171.)

The Movements of Birds.

(SECOND PAPER.)

In the air the typical bird is at its best, and all birds on this globe use their wings in travelling. The Ostrich and others of the *cursores* which are not able to raise their bodies from the ground, make good use of their wings to assist them in running, while the Penguins are said to use their abbreviated pinions in their movements beneath the surface of the water. Figuiet says that birds can swim, so-to-speak, in the air, and it may be said that birds may literally fly in the water; which I have witnessed on more than one occasion, where the birds used their wings in their efforts at escape.

At the Aerial Navigation Congress held in Chicago in '93, I am informed, a paper was read on "The Mechanics of Flight," and the writer of the paper sought to compare the movements of birds on the wing with man's efforts to soar. We might with equal propriety discuss the anatomical construction of the Angel's wing, or the mythological feats of Dædalus in escaping from the labyrinth. For the term "Mechanics of Flight" is wholly inappropriate in its entire significance, to the movements of birds on the wing. It savors of presumption in offering the efforts of strictly terrestrial creatures in comparison with the smooth soaring of many species of birds. Because we are able to demonstrate the principle of the boy's kite, a string and a current of air, it seems preposterous to me to attempt a comparison of the eagle's flight to this poor contrivance, and mechanically human illustration. We might as well compare the build of a fish with the scientific requirements of a boat's shape. All know that a fish turns belly up when dead in the water, and a boat built on the fishes model would upset. This has been repeatedly proven.

Now has it not occurred to most of

us that animals have different spheres, and may be away beyond our understanding in many respects? Certainly; and we should be willing to admit this in the case of our dear birds; "the spoiled children of nature and favorites of creation"—as Figuiet so beautifully calls them. In this age of liberal thought, when the study of the soul is denominated a science, and there are those who write on birds and mammals in their psychological relations, will it be improper to admit birds possess attributes, physiological processes and chemical affinities, which are not understood by man and possibly never will be. This seems most reasonable to me, and I accept it as truth as readily as the acknowledgement is made that we fail to comprehend the principle which enables the dog to follow a track by what we term the principle of scent.

We all know that there are thousands of animals which have a power of vision far superior to that possessed by man; while hearing, feeling and smelling are likewise developed to a much higher degree, in cases well understood. But in addition to this superiority in understood sense perception, there are several other channels of perception open to these so-called subordinates, which man does not possess, or possesses to so slight a degree as to make him incapable of appreciating and identifying. There are various senses which are markedly developed in many of the vertebrates, down to the lowest forms of animal life, and of which we have no comprehension in ourselves, and cannot appreciate or identify because of our lack. For instance, there is a sense of direction, as in the case of the dog and cat, which when carried from home will return unassisted. This little understood sense is developed in all the orders of animal life, and many insect forms, even in the larval (blind) state give evidence of strong powers in this line of life requirements. Surely,

no other of the understood senses are brought into use here. There are others; dozens, perhaps hundreds of senses, which are undefined and unappreciated with us, and upon which it is idle to speculate as yet. Therefore, although I know nothing in regard to man's method of aerial navigation and cannot add anything to the subject, I am sincere in saying that it is idle to discuss the movements of birds in the air with a view to explaining man's system of "the mechanics of flight."

Grebes and Divers move their wings regularly, the former very rapidly and the larger loons much slower. There is the least effort at fancy flight among these birds of any of my acquaintance. The long-winged swimmers, as the Gulls and Terns are called, are exactly the opposite of the Grebes, and seem to care nothing for the waste of time, or distance travelled. They sail, soar, plunge and fly straight away if need be. It is a beautiful sight to watch a flock of Terns as they skim the surface of the water or dash about, now high in air, and again plunging to the crest of a wave for a scrap of food or in sport. The Pelicans and Cormorants fly in a straight line, and their flight when undisturbed is a series of flaps, followed by a sail; more particularly noticeable in the Cormorants; and I have seen the Florida Cormorant fly great distances in this alternate fashion.

Ducks nearly all fly in a straight line, rarely veering unless scared, and all move with a fluttering movement of the wings, more rapid than in any other class of birds that I know of, unless we except the Hummers. A few species, as the Pin-tail and Gadwall will plunge and perform curious gyrations in the air at times, but as a rule the ducks fly for a purpose and waste no time in evolutions if the coast is clear. In migrations most ducks fly at a great height when the stops are far between, but in moving from lake to lake in the

autumn they only gauge their position to evade the shooters, and I have seen thousands of flocks fly over just out of range of the guns.

Wild geese mostly fly in a set form, generally described as the shape of a letter V, with the point to the front. Some geese, as the Snow Goose, at times fly in irregular, straggling flocks. The Canada Goose is the best example of a system in flying. The birds start up from a field or lake irregularly, but they quickly form, and if fired into will again return to the V shape. The birds have a leader, or pace-maker as the position is called at the present day, and this position of pace-maker is successively held by all the birds, or at least by different ones successively, as I have repeatedly observed. This change in pace-makers is evidently with mutual understanding, and is at once likened to the act in the case of a group of racers on the bicycle track. However the birds, unlike the bicycle racers, never follow directly behind but are nicely spread out and are always ready for a spurt, so-to-speak. An unobstructed course for them in the whole country. They are not confined in their range and are in no danger of a mix-up in their flight. Truly they recall the lines:

"No pent up Utica contracts our powers;
But the whole boundless continent is ours."

The Swans are slow fliers; always ranging into regular position and lining out at equal distances from one another. They rise into the air from the lake and move off in a ponderous manner, and in appearance may be likened to a train of towed barges. Slowly rising to an immense height they move gracefully and in a straight line, and never a sound is uttered, at least by the Whistling Swan, which I have observed.

The Herons are ponderous fliers and are not capable of sudden change of speed or course. I have seen Least

Bitterns fly directly into bunches of rushes in escaping from the nest, and they have often been caught in the act of leaving the nest. Sometimes the Herons sail on motionless wings and I have observed this practice with the members of heronries in the spring. Sandhill Cranes are ponderous fliers, but they are extremely graceful when sailing at great heights. I have observed them sailing about at the height of a thousand yards for hours at a time, where they seemed to soar for the pleasure, or perhaps for the admiration of their mates, to whom they conversed in tinkling notes resembling a cow bell. This species, like all long-legged birds extends its feet out behind when flying. The Rails and Gallinules are slow fliers, and I have never observed a bird rise to a height of fifty yards above the water. The movements of the wings are in short, rapid flops and the impression follows that the bird does not try its best, for the wings are never fully extended,

Among the shore birds we find a great variation in flight. We have the short flight of the Woodcock, the towering of the Wilson's Snipe, the remarkable evolutions of the little Sandpipers, and the soaring and trembling flutter of the Field Plover. Most of the shore birds are strong fliers, and many move with great rapidity, but few proceed in a direct line. I have seen mixed flocks of Least and Semipalmated Sandpipers circle about a lake for an hour at a stretch; performing every form of tactics in bird manoeuvres. The Phalaropes are graceful flyers as well as swimmers. The Tattlers are vigorous on the wing, and erratic in their flight. Plovers are graceful on the wing, and it is a pleasure to watch a flock skimming the meadows in the fall. The military precision of a flock of Golden Plovers is admirable; there is a rank and file; detachments fall out, and again bring into line. Sometimes

the flock spreads out in rank, very tempting to the gunner, and then turning, the birds sweep by in a column, entirely different from the compact grouping of the Sandpipers, which I have seen in groups of twenty to fifty birds in a mass that could be covered by a big sheet.

The Grouse and Quail have a quivering burst of speed when startled, but if flying naturally they all beat the wings and sail alternately. The Prairie Chicken is a straight away flier, rarely dodging about, while the Ruffed Grouse is very elusive and covers his retreat in the woods. Wild Turkeys will often run a long distance, assisting in their escape by the aid of their wings. They can fly with great vigor if necessary and I have seen a flock fly over a half mile to a forest beyond a river. The birds were flushed from an open field and their movements could be well observed as they raised to an elevation of eighty yards or so and made a bee line for the forest, into which they sailed for the last fifty yards of their flight.

We find many forms of flight among the birds of prey, and though they are all of a general pattern, still there are variations. The Turkey Buzzard, which has extended its range into Michigan only within the last quarter of a century, is a bird of tireless flight, and often sails for hours at a time in search of prey. I am of the opinion that this species may sail in a straight line or in circles, without a breath of wind stirring and without descending from its plane. This opinion is not in accordance with accepted theories, but without giving my version I am going to let my opinion stand, and in time it will be acknowledged correct. It is not for scientists of present understanding to say that this bird is to be governed by the principles of "mechanics of flight," and that a bird cannot maintain its position on motionless wings unless there is a breeze, as with

the boy's kite. There is a principle in the flight of birds and insects which we do not as yet understand, and all comparisons with the "mechanics of flight," as understood by man, are idle.

The kites are fine examples of fancy flying, and their movements are ever entertaining to the observer. A Swallow-tailed Kite is the nearest to perfection in an exhibition of fancy curves and dashes of all the birds of my extensive acquaintance. In many respects it resembles the movements of the Terns, but it has a grace that is unequalled by any of the water birds. The Marsh Harrier fills a position which is unique; sailing low over the meadows and marshes, and pouncing upon unlucky field mice and other small mammals that cross its path. The Cooper's Sharp-shinned and Goshawks are strong, bold fliers, and possess a dash only exceeded by the Falcons. The Buzzard Hawks are sluggish in flight, and rarely capture live birds. They lack the dash of the others and are content to sit on a perch and watch for snakes, toads, and in fact most anything in the line of animal food, including insects. The falcons, though excellent fliers are not necessarily flesh feeders at all times, and the Sparrow Hawk prefers a diet of grasshoppers in summer, if we are to judge by the crops examined. It is an interesting sight to witness the courting movements of a Sparrow Hawk; when every form of flying is exhibited, from simple hovering to the most intricate evolutions that any bird is capable of.

The Eagle's flight is ponderous, but one is surprised at the rapidity with which these great birds dash through the air. To see an eagle flying at a distance, one would not think that it moved at a rate equal to the fastest train, yet when a dash is made at close quarters it is easy to believe that the heavy creatures move at a faster rate than one hundred miles an hour, and

some theorizers claim over one hundred and twenty an hour. An interesting sight, and one often seen on the coast of Maine to Texas, is the robbery of the Fishhawk by the Bald Eagle. This unfortunately selected emblem of our land, which regales itself on dead fish which it finds on the shore, also has the censurable habit of robbing the Osprey of its honestly acquired prey. Watching from afar, the Eagle hastens toward the successful fisher as soon as it is seen to arise from the water with its catch. The fortunate, or as we may say, unfortunate bird, perceiving its pursuer, mounts into the air and endeavors to escape. Up, up they go, and often appear like mere specks in the sky before the pursuit is finished. It always seems strange to me that the Fish hawk does not attempt escape by a straight away flight, as in that case the weight of the fish would not retard the fugitive as much as in an upward sweep. However, in all instances that I have witnessed, the invariable efforts at escape by the burdened Fish hawk is in upward flight; and too, the end is about always the same. The Eagle below moves in majestic circles, rapidly gaining on the struggling, handicapped Hawk which vainly tries to save its prey by alternately furiously flapping its wings and soaring. At last, when the Eagle is on a level with the burdened bird, the circles are curtailed and just as the pursuer is about to close in on the fatigued hawk the fish is dropped in sheer desperation. The Eagle then ceases its persecution for the time and flies away. I have read that the Eagle would drop like an arrow and catch the released fish before it struck the water, but I have never seen anything of this kind.

To be continued.

A Novice's Note-Book, No. 3.

Viriden, Ill., September 29, 1881.
Nighthawks still continue to appear toward evening.

Wild pigeons began to appear yesterday morning, which was cloudy and foggy. The cloudy weather continues today. Today the pigeons began to fly over the timber about daylight, in flocks of 20 to 100, and the flight did not cease until between eight and nine a. m., when the sun came out very bright. Very few of the birds settled in the timber, and all flew toward the west.

Two Thrushes, taken for Wood Thrushes, were seen yesterday south of town. One of them was in a small maple grove, and the other was in a hedge, on the ground. This reminds me that I found several of these Thrushes nesting this season in a hazel patch, but supposed they were Brown Thrashers and thought no more about them. I did not suppose that the Wood Thrush was found around here.

Hawks are very common in the timber now. I suppose they are following the Pigeons. They are more common than I ever saw them before.

Also saw a Kingfisher along the creek.

Oct. 5. Pigeons were flying south all day yesterday in large flocks, some having between two and three hundred. Hawks still very abundant about the timber.

Oct. 14. A chilly, rainy day. Large flocks of ducks flying southward.

Oct. 15. Shot a Green Heron on Sugar Creek.

Oct. 17. Ducks and Geese are passing over, going southward.

Remark: My records for 1881 end with the foregoing note. Like many present-day observers, my boyish records opened with the spring migration, continued intermittently through the nesting season, and ended abruptly

with the end of the fall migration. However, we learn by experience, and in due time my winter notes began to show evidence of all-the-year observations. P. M. S.

Jan. 16, 1882. Cold and snowy. Saw a Downy Woodpecker flying about in the garden. Also noted the Black Snowbird (*Junco Hyemalis*.)

Jan. 27. Cedar Birds have appeared in small flocks of eight to ten. Also an occasional Redbird or Cardinal noted.

Saw two Doves, which were sitting in the corner of a rail fence in a corn-field. They were evidently trying to winter here. Saw a Rain-Crow yesterday in a tree in town. (After a maturer judgment based upon twenty years additional observation, I cannot vouch for the note regarding the Rain Crow, or Yellow-billed Cuckoo, at Viriden, Ill., in mid-winter, yet at that time I was most certainly familiar with this Cuckoo. At this period I have no idea what observation prompted the note. P. M. S.)

Jan. 27. Went out to a slaughter-house intending to get a Crow to stuff, (to practice on rather.) As I was returning home several Crows flew over me, and I shot at one, bringing it down.

The others began to "caw" and fly around, one or two flying at me as if to attack me. Their outcry brought about twenty Crows to the scene, all making a great outcry. I walked away to a distance, leaving the wounded Crow, and then turned to watch them. Presently they all alighted near the fallen Crow, and appeared to be holding an inquest. What the verdict was I do not know, but in a few minutes the Crows arose, and in a short time not one was to be seen.

Feb. 4. Saw a Yellow Hammer (*Flicker*) in the timber.

Feb. 5. Warm and bright. Heard two Redbirds singing. Cedar Birds are flying about; their only note, so far as I have heard, is a sort of lisping chirp.

They appear to be regular winter residents here, going north in the spring.

Feb. 6. Warm and bright like the past week. A Redbird sings merrily at a distance.

Saw the first Larks (*Prairie Horned Lark*) They are around in flocks of ten to twenty. Heard individuals singing from the ground and also on the wing. One was singing in the air, about 60 yards up, rising and falling and uttering its notes. Presently it descended to the earth like a flash, falling straight down to within 10 feet of the ground with closed wings, when it suddenly checked itself, alighted on the ground and continued to sing.

Ducks and geese going north by the hundreds. I saw six flocks go over in less than a half-hour. They were flying all day.

Feb. 9. Heard the twitter of a Bluebird this morning, and saw it sitting in the top of a tall maple in town. This is somewhat earlier than it appeared last year, which was Feb. 25. Warm and bright.

Feb. 10. Bright and pleasant. Bluebirds twittering from the tops of maple trees. Ducks have been flying northward today and yesterday.

Feb. 11. Heard the chirping of a Robin this morning, and saw several during the day, in town. Saw five at one time, sitting in the top of a maple. They are eleven days earlier than last year.

Saw a flock of about twenty Blackbirds (*Bronzed Grackle*), in the morning, and saw several stragglers during the day. Warm, but cloudy, threatening rain all day and sprinkling at times.

Ducks flying all day, one flock after another, steadily pursuing their way northward. One or two flocks were in sight at any time of the day.

Wild Pigeons are also flying very thickly. They are very numerous in the timber, and I counted as many as

thirty and forty in each of several large oak trees. They have never been flying all day.

Saw several Red-headed Woodpeckers in the woods. Also a Red-bellied Woodpecker.

Feb. 12. The first Ground Robin, or Chewink, appeared in town. It was in an evergreen tree when I observed it. Warm and pleasant, but windy.

Feb. 14. Warm and bright. Robins and Bluebirds here in numbers. The Bluebirds can be heard warbling on all sides, as well as Robins singing.

Feb. 15. I have noticed all winter that the Redbird associates with the Cedarbirds. When any Cedarbirds are around, a Redbird is not far away. (If this were not a record of mistakes as of authentic observations, I should omit the foregoing note. It became evident to me a little later that I was mistaking the female Cardinal for a Cedarbird. The real fact was that it was the mating season of the Cardinal, and the male was loitering in the vicinity of the female P. M. S.)

Ducks and Geese continue to pass over on their way north.

Feb. 17. Chilly and cloudy, after a good rain last night. Ducks passing over all day in numbers, several flocks being in sight at almost any time during the day.

Saw a small flock of Blackbirds going north toward evening

Feb. 18. Ducks continue to pass over in great numbers. Today they are all flying from northwest to southeast. More were seen than on any other day this spring. One large flock of Geese, out of a number of flocks seen, flew over very low, going north.

Noticed the first Red-winged Blackbird today. It was in a tree growing in a swamp. Female Redbirds (the record should be Cedarbirds) common in the timber.

Feb. 19. Recognized the first Chipping Sparrow today. It was gleaning about some gooseberry bushes, hopping about on the ground in town.

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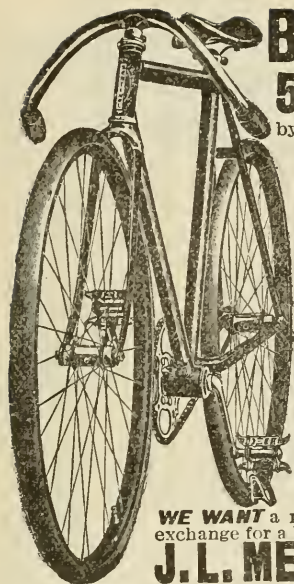
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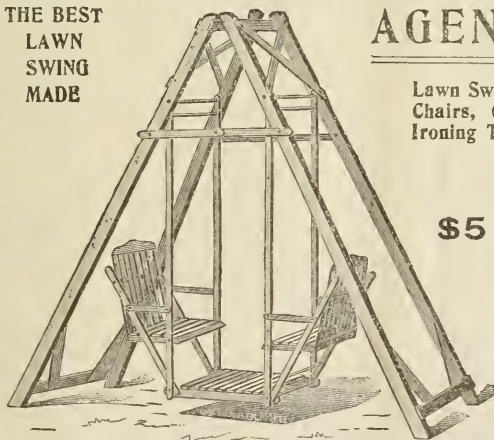
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OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XIX. NO. 6.

ALBION, N. Y., JUNE, 1902.

WHOLE No. 189

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190 " " " " June, 1902
195 " " " " Dec. "

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IMPORTANT. This June OÖLOGIST was issued June 30th.

WANTED.—To purchase relics, old firearms, antiques, fractional currency, curios, fossils, medals, collections of stamps, etc., etc., for my private collection. No postals answered. STEPHEN VAN RENSSELAER, JR., West Orange, N. J.

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THE OÖLOGIST.

VOL. XIX. NO. 6.

ALBION, N. Y., JUNE, 1902.

WHOLE No. 189

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
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The Barn Owl in Orange County.

In my last article which has appeared in the Oölogist, I mentioned the fact that my next notes would probably concern some one or more species of our Owls, and as a young friend of mine has just handed me a nice set of

seven fresh eggs of the Barn Owl, my thoughts naturally turn to this bird. I do not remember my first introduction to *Strix*—it was probably on some moon-light night as he sailed slowly over the alfalfa lot, and may have been assisted by a double barreled shotgun, but I do remember very distinctly, the first eggs of this bird which I ever obtained. The event occurred about eight years ago, I think and I still have two of the six eggs which made up the full set. Their taking came about in this way. To the south and east of Fullerton, the Santa Ana river broadens out into an extensive dry wash covered with sage, elder, scrub willow and cactus. This wash has at sundry times been an object of charity to certain persons who had a little money to sink in "California real estate" and who thought—or were told by their agents—that this sandy loam (?) was just the soil for walnuts, olives, apricots, anything in fact except citrus fruits. A year or two of residence in the wash usually convinced these adventurous spirits that there was no foundation for an immense fortune to be found there and they decamped—often in the interval between two days. They left their little cabins behind them, and one, in particular, left a young well of about twenty feet depth just back of his shanty.

Happening to pass this place one day in April I peered down into the old hole and saw there two Barn owls. My best previous "take" of my collecting career had been a set of crow's eggs, but here was happiness and oölogical richness beyond my boyish dreams, I being then about fourteen years of age. So great was my trust that there were eggs under one or both of those

owls that I never stopped to frighten them up, but hunted around until I found a wabby old ladder which had evidently been used in excavating the well, and, with much labor and several "rests," got it over the edge and down to the bottom of the hole. I never realized before that any bird could fly "straight up," but both of these owls did and they were not at all slow about it either. By some accident neither the ends of the ladder legs nor the numerous pebbles which I knocked down in setting up the ladder, fell on the eggs which one of the birds uncovered by her flight. These were six and fresh, every one of them, and, though I have found some very rare eggs since, I have never felt quite so elated as I did with that find. I managed to get home with five whole eggs, the sixth having fallen out of my hat, which, in those halcyon days, was my only collecting basket, and blew all of them by the convenient method of a pin hole in both ends.

While I have found the eggs of seven out of eight species of owls which are known to nest in Orange county, still I doubt if I have found a dozen sets of this species in the past six years. They are plentiful here, too, being by far the most common owl of the foothill region and almost equalling in numbers the persistent little Burrowing Owls of the lowlands. Here in the hills they occupy holes in cliffs almost entirely, passing suitable nesting sites in hollow trees for seemingly less suitable holes in dirt and rock cliffs. I seldom find more than one nest of the Pacific Horned Owl in one canyon, but will frequently find the Barn Owl nesting within a few feet of the home of the big *Bubs*, while in the dirt banks of the Santa Ana river (as Oliver Davie has already said) and in similar banks of lesser "wet weather" streams, any number of pairs of Barn Owls breed occupying holes which are seldom more than a few inches apart.

In the farming section of this county, they nest in empty barns, pigeon lofts, tank houses, the gable ends of old dwellings, and in fact, almost "any old place" which will afford protection to them and their young from the elements. I know of one pair which laid a set of eggs on the top bale of a pile of hay in a warehouse located in the heart of the busy little town of Fullerton, where I was then living.

They are early layers, these Barn Owls, rivaling the big "hoots" in that respect. I remember flushing one from a hole in a seventy foot cliff one cold February morning. I was going over the cliff on an inch manila laid line, after the eggs of a pair of Pacific Horned Owls which I knew were breeding in a hole in the same cliff. The morning was raw and foggy and the rope felt about like a knife to my cold fingers. The blue gray walls of the fog shut me out from everything save the face of the cliff and I nearly lost my hold on the rope when a ghostly Barn Owl came hurling out of a hole some two feet from my face. Investigation revealed five eggs which is the average number laid by this bird throughout Orange county. During the past year I have noted one hundred and two sets owned by various collectors within a radius of fifteen miles of my home and of these, sixty-two were of five eggs, three sets of nine, ten sets of eight, fifteen sets of seven and the remainder about equally divided between four and six eggs. I have found nests of this bird which contained only three eggs, incubation far advanced, so there are probably certain females whose clutches are limited, though I think, from my notes on the Western Red-tail and other raptorial birds that females are not always regular in the size of their settings. To return to my owl-cliff story, the day was the first Sunday in February and the eggs held small embryos. In the home of Pacific Horned Owl were four per-

fectly fresh eggs. I say "perfectly fresh," but—as is common with this owl—one egg, probably the first laid, was slightly bloody.

On the other hand, I have seen sets of the Barn Owl taken late in May which were comparatively fresh, and at this writing, April 11th, I have just thrown away two sets, of four and three eggs respectively, of the Western Red-tail, which were too far advanced to save. They were brought me by the same lad who has just given me the set of Barn Owl's mentioned above.

HARRY A. DUNN, Fullerton, Cal.

The Movements of Birds.

(THIRD PAPER.)

The flight of the Owls of my acquaintance is not rapid, and is not even as great as that of the Buzzard Hawks. Their movements on the wing are noiseless. All Owls are more or less diurnal, and the Great-Horned Owl is able to capture its prey in the day time, which it does during its brooding. The flight of Owls is in a direct line, but they can change the course or drop on the perch or prey in a most unexpected manner. Owls fly with the wings fully extended, and to one acquainted with the birds of a locality it is very easy to identify the species at a considerable distance.

The Cuckoos are not strong flyers, but are exceedingly graceful in their movements, and may be likened to the Pigeons in flight for the want of a better comparison. With their long tails, and their sinuous course in flight they cause much speculation among the amateur observers.

The Belted Kingfisher has a gait of its own—a combination of the Flicker and Butcherbird. This well known species has a habit of poising in the air when about to drop on a fish. I have seen one hover in one spot for over a half minute before diving. This habit is al-

so observed in the Osprey and Brown Pelican, both of which plunge for their prey but in a very different manner. The custom of hovering above possible victims is noticeable in many species, and is common with the Sparrow Hawk when it makes a dive for a bird or in merely dropping for a grasshopper. Many species appear to follow this habit as a variation in the methods of courtship, and I have repeatedly seen Bluebirds offering song in this position. The Flycatchers, especially the Wood Pewee and Kingbird are given to hovering in this manner. The Red-headed Woodpecker is also an example.

Everyone is familiar with the undulating flight of the Woodpecker. A spasmodic, noisy style of locomotion which cannot be confounded with the flight of any other birds. With all which I have studied, the flight may be described as a few rapid strokes of the wings and an upward shoot, followed by a descending sweep. This is pronounced in all the members of the family, and the big Pileated Woodpecker has the same undulations that is observed in the Little Downy, but in a greater degree. Have my readers carefully watched a Woodpecker leave its perch on the trunk or limb? The bird throws itself backward from its vertical position by a leg spring, together with a tail movement, turns in the air in the fraction of a second and is sweeping away to the next perch. Arriving at the next resting place it makes a single counteracting stroke of the wings against the air, and perches lightly on the bark of the limb or trunk. The duck spends five to ten seconds in getting ready and alighting, and the Grouse makes a pitch and runs to keep its balance, the Herons settle and flop their wings as the legs paw the air for a perch. But the Woodpeckers fly straight for a perch, and just when you think that they are to bring up against the tree, and as any other bird would

do, they stop in the fraction of a second and alight as airily as a cat in making a spring.

The movements of the Whip-poor-will on the wing are slow, and it is safe to say that this bird cannot catch the swift flying insects that form the food of the Flycatchers. Its food consists largely of night flying moths, but it is not averse to hard-shelled insects, as the beetles. Though this species occasionally sings, and clucks on the wing, its wing movements are perfectly silent, and it rises or drops as quietly as any bird of my acquaintance, and never utters a protest when it is scared from its eggs. It sometimes sails after the manner of its near relative, the Night-hawk, but its usual style is in spasmodic flops, and its movements on leaving the eggs much resemble the actions of the Woodcock. The Night-hawk differs from the Whip-poor-will in flying in the open, and also in frequently appearing during the daylight hours, which is certainly not the custom of the Whip-poor-will, so far as I can learn. In movements this high flier somewhat resembles the erratic flight of the Killdeer, occasionally sweeping down as with the Plovers, but ending this plunge with a peculiar sound like the rushing of wind in a hollow.

Chimney Swifts always fly in circles, so far as I am able to learn, and even in migration move in the customary curves. I have seen Swifts moving with the wind north or south on their journeys; and they still swept about in great curves. Each time they came up facing the wind they would apparently just hold their own for a few seconds; then sweeping around another curve, they would be carried on toward their destination. Though called a Swift, this bird is not a very rapid flier, and many birds can pass it in a race. It is a tireless flier, and though not possessing dash and a variety of sudden movements, it is persistent in its search for

food. The Swift is undoubtedly the most thoroughly aerial of all our birds, for excepting the time that it spends in clinging to the sides of its nest or on it, or to the grimy walls of its retreat, it is wholly occupied in flight. It performs its courtship in the air, and feeds its young on the wing after the nestlings have learned to navigate the heavenly blue.

The Ruby-throated Hummer is a marvel on the wing and outranks all other birds in the world in proportion of swiftness to weight, to an extent of from three to one to five hundred to one. For instance, admitting that the Hummer flies at the rate of sixty miles to the hour, and weighs one third of an ounce; if an Eagle weighing ten pounds were to fly as rapidly in proportion to its weight, it would fly four hundred and eighty times as fast; by which it will be seen that it would take the big bird but a short time to circumnavigate the globe.

The Flycatchers are professionals in the line of short, sudden dashes. Their activity is marvellous, and no class of birds possesses superior qualifications as masters of the injurious insect pests. The ordinary flight of the Flycatcher is a fluttering series of undulations, but when prey is sighted, a dash follows, which is nearly always successful, if we are to judge by the snap of the bill which is usually heard.

Among the Oscines, that arbitrary division of so-called song birds, that excludes several good singers, and embraces many that cannot sing a note, we find many forms of flight, and peculiarities which would not be tolerated by systematists, if they could regulate all things in accordance with rules of classification. The Titlark and Horned Lark fly at great heights at times and apparently for the entertainment, as they are ground feeders. No other perchers excel these birds as amusement seekers in the heavens, and

they are only outstripped in altitude by the Swifts among the small birds, and the Swifts are after prey. The Bobolink towers in its song flight, and the Ovenbird and Vesper Sparrow also pour forth their refrain at times when making a special effort on the wing. The flight of these birds at the time when giving this effort is in the form of a flutter. Other birds have a fluttering form of flight, generally more noticeable in nesting time, as with the Bluebird, Song Sparrow and a few other Sparrows, while this form of wing movement is a general habit with the Wrens.

The long-tailed perchers fly with a flirt of the tail, as the Brown Thrush and Towhee; the same is seen in the Chickadee and Gnatcatcher, as well as with others of the short-winged birds which are often provided with long tails, as if to make amends for the deficient wing power. Other species, as the Meadowlark beat the wings rapidly after the manner of the Bob-white. Few birds with long wings and ample tail are given to this form of flight. The Rose-breasted Grosbeak, Crossbills, Goldfinch, Siskin, Nuthatches, Horned and Titlarks, and many others including the diminutive Brown Creeper adopt an undulating flight. This form of flight is also followed by the Maryland Yellow-throat and some others of the warblers. This up and down course, common to the Woodpeckers as well, is never seen in swift flying species, as the hawks or waterfowl and shore birds. Crows, Ravens and Jays are straight away fliers, rarely deviating from a selected course and seldom indulging in fancy flying. Kingbirds select Crows and Buzzard Hawks from their known habits of flight, to persecute, but the falcons and rapid flying ducks are not often chased by the tyrant. Some birds vary their style of flying at different seasons, as the Bobolink, which is never known to fly high in the summer after the nesting duties

are finished. Others differ when flying singly or in a flock. The Snowflake is a simple flier when single, but when a flock sweeps over the fields in winter the variations are marked, all the sweeping dashes of a bunch of Sandpipers being indulged in, the flock presenting a fine spectacle as it swirls above the snow covered plain.

The Swallow family is composed of graceful fliers, and all forms of aerial movements are followed by these insect feeders in their search for food. The Barn Swallow is perhaps the most graceful, but is followed closely by the White-breasted, while the Martin is a powerful bird on the wing.

M. GIBBS, Kalamazoo, Mich.

The Shore Birds of Martha's Vineyard.

BY CHARLES LINCOLN PHILLIPS, "AUTHOR OF FREDERICK YOUNG."

While at Cottage City, Martha's Vineyard, last September, I much enjoyed making observations, and a few collections, among the beach birds of this ornithologically favored coast. The few days I spent here were of a recreative nature, but I made a point to spend many hours with the migrating shore birds on the ocean beach and at Sangekontacket pond. Large flocks of Ring-necked Plovers, Least and Semi-palmated Sandpipers, Yellow Legs, Laughing Gulls and Wilson's Terns, interspersed with small flocks of Piping Plovers, Turnstones, Least Terns, Pectoral Sandpipers and Willets, frequented the sandy shores. I wish the interior ornithologists and oologists, who do not find it convenient to visit the seaboard, might have the pleasure of experiencing a few hours among these interesting species.

My friend and I especially enjoyed the beaches along the road leading from Cottage City to Edgartown, where long stretches of yellow sand were relieved by the azure sky and the cerulean ocean,

which at various points was beautifully colored by various shades of green, violet and blue. Skimming over the inrolling waves by hundreds, the previously mentioned birds enlivened the maritime views. The Terns with their graceful forms and exquisitely contrasted markings were especially beautiful.

One day at ebb tide we were sitting in a secluded spot on the ocean beach, when a large number of Plovers and Sandpipers gathered near us. We had a powerful achromatic telescope, which enabled us to study their habits minutely. We could see them pruning their feathers, caressing each other, going through playful antics, and chasing the waves out on the strand, after small crustaceans and algæ, only having to retreat precipitately a few seconds later to escape being overtaken by the returning foamy billows. The Plovers, with their large eyes and gracefully rounded forms, were very interesting to observe. A pair of Turnstones and several small Sandpipers approached within ten feet of where we were sitting. The Turnstones realized that we appeared strange, and with a low startled twitter, turned and ran away from us. The Sandpipers seemed to be less timid and unconcernedly gleaned their saline food.

While here we often sat on the yellowish-white sand for hours reading and conversing. It was a great pleasure to me for I could see and hear much of the class aves in which I take a great interest. Hundreds of shore birds and many swallows were constantly in view, and at low water thousands of the former collected on the sand-bars and fed or rested. At this time I observed that the families had a habit of separating. That is, the Gulls, Terns, Plovers and Sandpipers would each occupy a different part of their chosen bar. While reading, the rather discordant notes of the Terns, the peeping of the smaller shore birds, and the loud ha, ha! of the

Laughing Gulls, commingled with the swash of the waves of the beach.

Earlier in the season a number of these birds breed extensively on Muskeget, Huttysunk and other sandy islands in this vicinity. At that time the birds and eggs are protected by wardens from the too greedy collectors. This circumstance is to be commended for the birds are too beautiful and interesting to be thinned out without sufficient cause. If space but allowed I might write papers about these birds and the charming environments. I will now close, however, trusting the kind editor may allow more space to this subject at some future time.

A Further Consideration.

I note with regret that the subject that I suggested for the consideration and discussion of ornithological students under the title of "A Consideration," *Oologist* XVIII 88, June 1901, has not, up to the present, called forth a single expression of opinion. I had hoped that the seriousness of the subject would have induced such advanced students as the Rev. P. B. Peabody, and Prof. P. M. Silloway to furnish the succeeding chapters, thereby insuring to the *Oologist's* readers, and the ornithological students of the country, the advantage of the opinions of more mature student than the present writer.

A critical review of the history of American Ornithology, in detail, and of the methods of workers contributing thereto will reveal certain things that to the student who holds the study of birds as living individuals, far above that treatment which tacitly recognizes them merely as units of organic matter, and exemplifications of the various phenomena attaching to organic matters are by no means pleasing.

When one tries to account for the very evident fact that the rapidly developing bird students to day (particularly con-

spicuous in certain sections of the country,) greatly prefer to devote their energies to the amassing of large collections, in extensive series, with questions of classification as the main or sole object, rather than to a patient research into the knowledge of birds as living creatures, a very pertinent reason is not far to seek. It has ever been a failing of earnest students along particular lines, in their enthusiasm over *methods*. to forget the object originally sought, to confound (unconsciously) *means* with *end*. To those of us today, humble students as some of us may be, who have little sympathy with the hair-splitting methods of many advanced ornithologists, it appears quite evident that in every accessible country, with ever increasing persistency and enthusiasm immense collections are being made, and alarmingly large series of certain forms from restricted localities, with apparently no other object in view than the discovering of some insignificant character, whose variation from the corresponding character in the recognized form, may prove constant enough to permit the describing of "new form." and the adding of another name to a rather misleadingly large list, incidentally perpetuating the glory of the finder's name, or that of some friend, in the language of science. Probably no bird student will assume that in its time, this method of research has not proved productive of some results to actual knowledge but it will be rather difficult to convince lovers of birds rather than methods, that the results of such practice, as carried on today, justify the means. If it can be made to appear that we pursue the study of ornithology for the purpose of contributing to the refinement and exactitude of classification, that this is the *end* sought, then can no dissent be offered to the methods above referred to, but if classification is an *instrument* only, intended to aid in the study of

living birds, then to at least some of the humble students, there appears to be a danger that the practice of the above mentioned methods has a tendency to perfect the instrument by the impairment if not the total sacrifice of the object originally aimed at.

Although it would appear that the views of Mr. Reginald C. Robbins, are those of an extremist of a pronounced type, yet there is strong suggestion of truth (perhaps in somewhat exaggerated terms,) in his claim that to the classificatory quibbler no series is complete as long as one bird of the species remains alive, an example of individual variation.*

If then, a young student just entering the ranks of active workers, anxious to advance himself to the highest place possible in these ranks, casts about for a worthy example, what more natural than that he should note that bird killing occupies a front place, and that the describing of a bone, a muscle and particularly a feather, has so monopolized honor and attention, that as witness today we have an ever growing army of bird killers, and quite recently an ornithologist, acknowledged to be one of the foremost, classifies as outside scientific ornithology, all of the questions of bird study save those dealings with "structure and classification of birds, their synonymies and scientific description."

Many bird students are so situated that museums and large scientific institutions are inaccessible. All will agree that no such collection is likely to be quite so accessible to the private student, as would a small private collection. It is a necessity and primarily essential, that the student should know the birds he is to observe, and most ornithologists will agree that nothing is so helpful to that end, as the

* Bird-Killing as a Method in Ornithology. By Reginald C. Robbins. A pamphlet mailed by author to members of the A. O. U. with the Jan. 1902 "Auk."

possession of one or two specimens of each species. In my own experience I have found the collecting and preparing of a single specimen to impress the identification of the species more firmly on my mind than would the casual examination of many. Had there appeared less necessity for the making of limitless series, many students would have felt justified in forming such narrowly limited collections. Some there would ever be whose convictions in the matter would never have permitted their doing this much even (and most fortunate it is that there are such,) but the knowledge obtained by those who availed themselves of this privilege, enabling them to observe intelligently along the many avenues of study of the living bird, would produce results whose value has, I think, never been equalled by the deciding of the question of whether a slight shade of color or a trifling extra length of bill in a local form, entitled it to sub-specific recognition, and the proud honor of bearing in its tri-nominal appellation the distinguished name of a "scientific" ornithologist.

"Of all sad words of tongue or pen,
The saddest are it might have been."

But to those bird-lovers who are outside the tidal wave of classificatory enthusiasm, I think there is a gleam of light through the gloom, a promise of better times. I base this idea chiefly on two suppositions: Up to the present time the ranks of American ornithologists have been very largely filled by the young men who as boys were robbers of birds nests. Looking back over our earliest efforts we cannot otherwise class them. The teachings in the schools and the influence of the Audubon Societies will, I believe supply to the coming generations a different sort of raw material for the ornithological ranks. Moreover the fiercer a fire burns the sooner it burns itself out from exhaustion of fuel on which to

feed. There is a limit to the extent to which hair-splitting classification can be carried; there is a limit to the magnifying power of lenses. And it certainly looks as though that limit was not only in sight but right at hand, that even the powerful lenses in the orbs of the most pronounced hair-splitter would soon fail to detect material for his methods. When this time shall be reached, and the field of classificatory American ornithology is acknowledged to be practically exhausted, when the last shadow of a chance for a new sub-specific recognition has passed and there is no longer a gleam of hope for the perpetuation of a name in the "halls of fame" "scientific" ornithology. Then perhaps we may hope that these zealous workers in an over-tilled field may join with the younger and rising generation of students in giving attention to the long slighted and neglected fields of study of living birds, and it may be that their attention once so directed, they will find with surprise that in this, to them new field, there is room for the specialist to devote special effort, and that almost boundless vistas of possibilities open up in this field of "unscientific" ornithology, for the increase of *exact knowledge*

Habits are iron bands, and I suppose it is too much to expect that many will renounce these wasteful and dangerous methods, or speak a word of encouragement in behalf of the gentler, more promising ones, until the dawning of the ornithological millenium, but with or without their approbation, I firmly believe this is sure to come.

The great pity is that when it comes some of the species which today furnish us with a boundless mine of knowledge and pleasure, may have passed on to join the ranks of the Great Auk and the Labrador Duck, forever beyond the power of rejoicing with their lovers over the happy change in the methods of ornithological study.

B. S. BOWDISH.

50 W. 98th St., New York.

NOTE:—Since writing the above two articles in the April Auk on "Geographical Abrasion," and "The Seasonal Change of Plumage of the American Goldfinches," gives additional indications of the coming of the new era.

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Do you know of that king and queen who stood bare-footed, and "all naked from their waists upward," in the great hall of Westminster? Or what plumber's dog licked the blood of a king? Or why Henry VII hanged his four English mastiffs as traitors? Or what king apologized for taking so long to die? Or why Marlborough and his duchess were disgraced?

Do you know the story of Thomas a Becket and the Emir's daughter? Of fair Rosamond Clifford's bower in the labyrinth at Woodstock, and the telltale silken thread on Henry's golden spur that led to her becoming a nun? Of Richard II and the fatal trap-door of Vidomar? Of the dreadful warning that hung over the bed of Isabella of Angouleme? Of the queen who was discovered in London, disguised as a cook-maid?

Do you know how the mere fact that the Duchess of Marlborough putting on, by mistake, the queen's gloves, changed, as Voltaire says, the destinies of Europe? Or why the great Elizabeth and her prime minister had to deal secretly with Catherine de' Medici's tailors? Or what that which passed between "Nan" Boleyn and King Hal beneath the yew-tree in the cloistered shade of Sopewell nunnery, meant to Wolsey?

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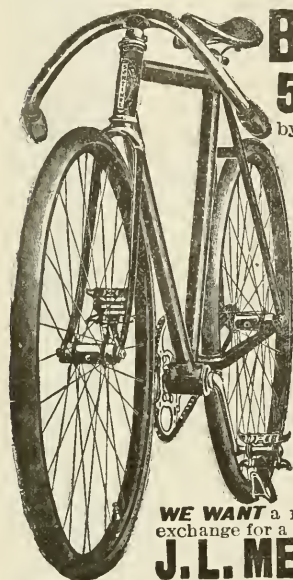
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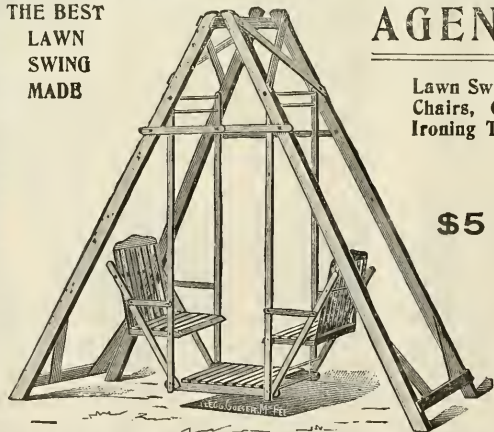
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VOL. XIX. NO. 7.

ALBION, N. Y., JULY, 1902.

WHOLE No. 190

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190 " " " " June, 1902
195 " " " " Dec. "

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TAUNTON, MASS.

THE OÖLOGIST.

VOL. XIX. NO. 7.

ALBION, N. Y., JULY, 1902.

WHOLE No. 190

THE OÖLOGIST.

A Monthly Publication Devoted to
OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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FRANK H. LATTIN,
Albion, Orleans Co., N. Y.

ENTERED AT THE P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

If Not, Why So?

And the Lord looked down and was appalled at the wickedness of man and said, "I will put one good man among them," and forthwith there appeared upon the earth a man who could mind his own business. "A FAKE"

"A bird in the bush is worth two in

the hand," from the bird's point of view, and the opera glass advocates, indeed, adherents of the opera glass are the warmest friends our birds have, not only awarding them the interest that is their due, but accomplishing it in a wholly harmless manner. Having the welfare of birds at heart they can not tolerate those who entertain opposing views; hence, a magazine now and then blossoms forth with an article brimfull of indignant condemnation of all who raise an arm to kill a bird or touch an egg. Secure from a counter attack by their own innocence their criticisms are austere and unsparing and no one gets a larger dose than a class of heartless, blood-thirsty barbarians known as Ornithologists, especial attention being directed to the fact that this class are students of birds and so should be the first to realize the error of their ways. Now if an Ornithologist is to be converted it must be by logic and not censure. He regards these attacks with amusement or disdain according to his disposition, suggesting that common right of summer—insolent Kingbird and soaring Henhawk. He looks up to ascertain from what exalted pinnacle of wisdom his opera glass friend presumes to look down and cast depreciative reflections upon his doings. Not finding it he looks the other way and there it is just mushroom high. He smiles a serene self-satisfied smile which gradually gives place to a sympathetic and pitying expression as he muses back into the past.

The one great joy of his boy-hood was to escape into the woodland quiet where ungrateful parents and grim old school masters and other unpleasant

antries never came. Here dwelt the companionable Blue Jays and Red Squirrels and their buoyancy of spirit was catching and life became a glad-some thing. What fun to route the soft eyed flying squirrels and nimble footed deer mice from their snug retreats in old stumps and dead trees and how a mewy shout would speed the already panic stricken rabbit and what music in the partridge's muffled drum and henhawk's indolent scream; but we must pass to other things. He liked the furred denizens well but the birds a great deal more. It was in his nature to favor these birds. They were aware of their advantage in the power of flight and if not too closely pressed would attend to their every day affairs almost unconscious of his presence but the mammal tribes always had an eye in his direction, ready to flee at the first movement towards closer companionship. He knew this timidity and suspicion was a natural instinct necessary for their preservation but it was not flattering to be treated thus and he preferred the birds. In all his rambles they were constantly under his notice and he began to observe their doings and characteristics until to study them became his main object. Their making was a source of much amusement and he felt the charm of their beauty and melody, besides he loved their country and the free independent life they led touched a responsive chord and it grieved him that he could come visiting but once a week. Their nesting was also very interesting. He found their dwellings in all conceivable kinds of places and marveled at the variety of taste exhibited, and exquisite architectural skill and more exquisite eggs.

The opera glass advocate was also abroad—an equal share in all the Ornithologist's discoveries and delights—but as the years rolled by he remained unchanged with exception of an increasing fondness for out door life and

birds. The influence of peace and quiet in which these birds dwelt became absorbed into his nature and he felt a fatherly solicitude for their welfare; so when a terrible thunder burst forth in their land and he saw their trust and happiness replaced by doubt and terror his wrath was terrible to behold and he sought out the cause and said impious things. Serenely unconscious of wrong doing, the cause was astonished at this reception, but took it all in and then told him to go hence or somewhere else and coolly walked away but not before exhibiting a score of birds cold in death, their dear little throats plugged with cotton and "their poor little legs held up in pathetic appeal." He learned that this red handed marauder was termed an Ornithologist and thenceforth he classed Ornithologists with sportsmen, plume hunters, etc., and cheerfully d—d the lot. About this time he acquired the opera or field glass. He was influenced into this step by an instinct to possess some instrument or weapon stimulated by novelty or by the simple pleasure in bringing birds close as possible even if an illusion. Of course there could be no other reason, unless failing sight, since a good pair of eyes do equally well for common birds and there could be no pleasure in observing such as the warblers in their various plumages as no one can identify them all without the liberal use of bird skins and so he would not know what he was looking at. Possibly the glass may assist in ascertaining the nature of their food but a year of this kind of observation would not equal what could be learned in a few days by dissection. On second thought, however, it may be used to study their emotions as depicted upon their countenances. Now we will return to the Ornithologist.

His first step from the narrow path was when he commenced to rob bird's nests. To him an egg had always

seemed a most wonderful and beautiful thing, as a flower to the botanist or a star to the astronomer. His refined artistic inclinations took very kindly to the elegance in color tints and markings and these combined with the variety of shapes and shell textures naturally attracted attention and aroused interest and he wished the eggs where they could be compared and studied, and so commenced a collection. Later he learned to collect in sets and the use of datas. In a few years his collection was a volume of field information and a quadruple volume to himself as he read the most between the lines. He was also of an active and enquiring mind. Why did some birds produce eggs so abnormally large for their size and others the reverse, and some deposit but one and others a dozen or more, and why the various shapes from spherical owl to cone like guillemot, and why some thick shelled and others very thin? Holding to the light a fresh Flicker's egg he noticed that the yolk in this transparent pearl like gem arose to the top, no matter how it was turned and he wondered why this was and why there was a space in the larger end, and other things. Perhaps the books would tell, and sure enough they did, and what he learned in this way was never forgotten. Thus he mastered well known facts and could give choice of many theories. He knew the process of egg formation and coloration together with chemical properties and could theorize evolution, natural selection, etc., in relation to both birds and eggs for he had also thoroughly read up birds and all this time kept pace with the opera glass adherant in the field. But now he wished to extend his knowledge beyond what could be learned from books and mere observation. During the course of country walks, especially in migration time, he met with birds that were strangers to him and he could not read them up be-

cause their names were unknown. By dint of careful research he identified a few of the strongly characterized species but this was little satisfaction. It was necessary to procure the birds, and the most joyous moment of his life was when he realized the ownership of a gun. Armed with this dangerous weapon and borne onward by irresistible enthusiasm, he brought panic and death into the haunts of birds, and yet no one loved them better nor rejoiced more in their society, for in childhood he had wept over "The Death of Cock Robin," and applauded bird kindness in "The Babes in the Woods," and from these early impressions of sympathy and affection had sprung a lasting friendship. Had they come to his call and allowed themselves to be fondled and examined, not one would have perished at his hands. It was now in his power to gratify a longing to handle them and compare the different shapes of wings and bills and feet and plumage variation, and ascertain their identity. By the aid of his key it was an easy matter to trace from family to genus but often he could get no further, and sent parts that could be saved to older heads and learning in this way it was impossible to forget. The anticipated pleasure in securing birds was discovered an illusion, for even though shooting them for study, it seemed a waste of precious life because in a day or two they went the way of all dead things. They must be preserved, and he passed through the taxidermist's hands and came out competent to prepare them in a scientific manner. This was a period of deep interest in books on taxidermy and he read much and comprehended what he read since he had mastered the practical work. To further his study of muls and learn effects of captivity upon plumage, besides observing characteristics more closely and other things, he purchased a trapping cage and aside

from the study of the captives, learned much about their feeding grounds and drinking places that otherwise would have remained unknown. He also experimented with the opera glass in the field and concluded it an excellent thing—at the theatre. But we must pass along content with having merely skimmed the surface beneath which lie volumes, for the intention has been to simply show that the Ornithologist has learned a few things that only the acquiring and handling of actual material together with a desire for knowledge in every branch of his chosen science could teach.

J. CLAIRE WOOD,
Detroit, Mich.

(to be continued.)

World's Fair, St. Louis.

ST LOUIS, U. S. A., Sept. 9, 1902.

Editor, "Oölogist", Albion, N. Y.

Dear Sir:—I take pleasure in sending you herewith a copy of the first Circular of the Fish and Game Department of the World's Fair at St. Louis in 1904. The Exposition authorities desire very much to secure full and comprehensive displays of the animal life of all countries at the Exposition. The plan of the Department includes exhibits of living animals and plants, literature based upon animal and plant life, the equipment and methods employed in the collection and utilization of such natural resources, the life histories of animals and plants, the appliances and methods for natural and artificial increase, and many other important subjects to which reference is made in the Circular.

The Fish and Game Department is collecting a Library of natural history books and papers for reference during the pre-exposition period, and for such final disposition as authors and publishers may direct. Publishers of such literature are earnestly requested to become exhibitors. It would please me

greatly to receive the "OÖLOGIST" as a part of this collection. Your co-operation in carrying out this plan will be greatly appreciated.

Very respectfully yours,

Tarleton H. Bean,

Chief, Department of Fish and Game.

[We have considered the above letter and accompanying circular of sufficient interest to our readers to print in full.—
ED.]

DEPARTMENT OF FISH AND GAME CIRCULAR 1.

St. Louis, U. S. A., May 12, 1902.

By proclamation of August 26, 1901, President McKinley invited the nations of the world to unite in the International Exposition to be held in St. Louis in 1904 in commemoration of the purchase of the Louisiana Territory from France in 1803.

The Exposition will be opened May 1, 1904, and close November 30, of the same year. It is to be situated in Forest Park, in the western suburbs of St. Louis, and will occupy an area of about 1200 acres. The amount of exhibit space will be more than 200 acres, or more than twice as much as at any previous exposition. The cost of the Exposition will be approximately forty millions of dollars. It is intended to illustrate the resources and industries of the world, their progress in civilization, and to give a retrospective view of their development.

Fish and Game.—Owing to the liberal scale upon which the Exposition is projected this Department will have ample space and unexampled facilities for showing the fishing and hunting resources and industries in a great building, which it will share equally with Forestry. Every effort will be made to display not only resources and industries, but also the methods and appliances involved therein. The hearty co-operation of great industrial associations, as well as individuals associated with fish and game interests, assures

the success of the plans now in process of execution.

You are invited to become an exhibitor in the Department of Fish and Game, and to forward promptly an estimate of the space you will require.

Copies of the Official Classifications, Rules and Regulations, and Application form, will be mailed to you upon your request.

Classification.—Fish and Game is divided into 5 Groups and 19 classes. It embraces essentially the same details as were collected and assembled in the World's Columbian Exposition at Chicago, and the Exposition Universelle at Paris in 1900.

It is intended that collections of wild animals shall form an important part of the hunting series. Fish and food products may be displayed when accompanied by models of fish curing or canning establishments. In connection with this Department, provision will be made for hunting and fishing camps, rifle ranges, angling and shooting tournaments.

EXTRACT FROM OFFICIAL
CLASSIFICATION
DEPARTMENT M
GROUP 120

Hunting Equipment

Class 720. Arms for trophies; copies of andient weapons. Missile weapons; bows, etc.

Class 721. Sportmen's arms and accessories; sportsmen's ammunition.

Class 722. Hunting equipment; appliances for training dogs.

Group 121

PRODUCTS OF HUNTING

Class 723. Collections of wild animals; menageries.

Class 724. Original drawings of land and amphibious animals.

Literature. Collections of birds and eggs.

Class 725. Skins and furs in the rough. Skins prepared for the furrier. Taxidermist's work. Undressed feath-

ers and bird skins.

Class 726. Horn, ivory, bone and tortoise shell.

Class 727. Musk, castoreum, civet, etc.

Group 122

FISHING EQUIPMENT AND PRODUCTS

Class 728. Aquatic life. Scientific collections and literature. Specimens (marine and fresh water) fresh, stuffed, or preserved in alcohol or otherwise. Casts, drawings and representations. Aquatic birds and mammals. Aquatic plant life. Fishing grounds.

Class 729. Floating appliances used in fishing. Nets, tackle, boats, devices and implements for sea fishing. Nets, traps, and appliances for fresh water fishing. Gear of every description Fishery literature.

Class 730. Angler's apparel of every description: rods, reels, lines, etc. History and literature of angling.

Group 123

PRODUCTS OF FISHERIES

Class 731. Fish curing and canning establishments. Products from fish: oils, roes, isinglass, whalebone, spermaceti, etc.

Class 732. Sea and fresh water pearls and pearl shells, mother of pearl, manufactured; sponges, corals, tortoise shell, etc.

Class 733. Appliances for preserving and transporting fish. Antiseptics for preserving fish.

Group 124

FISH CULTURE

Class 734. Marine fish culture; fish, crustacea, mollusks, radiates, etc.

Class 735. Fresh water fish culture; installation, equipment, and processes used in pisciculture; fish ways; culture of leeches. Marking of introduced fish for identification.

Class 736. Aquariums. Culture and breeding grounds. Food for fish.

Class 737. Acclimatization of fish; chemical investigation of waters in their relation to aquatic life. Processes

of rendering polluted streams innocuous to fish life.

Class 738. History of fish culture; statistics of the results of fish culture; literature.

Discussion of the Classification.—The classification is very much condensed but it will be found to provide a place for everything that has been assembled at previous expositions. The items comprising the catalogue of the World's Columbian Exposition at Chicago, and the Exposition Universelle at Paris, for example, can all be readily assigned to their proper places in the various classes of the present Classification.

Group 120—Hunting Equipment. In this group will be included series of weapons showing the development of the modern breech-loading gun, exhibitions of skill in shooting, hunters' camps, models of establishments for training dogs, and traps and other appliances for the capture of animals.

Group 120.—Products of Hunting. The illustrations of animals will include photographs taken by day-light, or at night by flash light; also books upon natural history and out of door life. This group will also provide for all the natural products obtained from animals.

Group 122—Fishing Equipment and Products, will embrace not only existing forms of animal life, but also representations of the relations between extinct forms and those now living. The animal forms will include reptiles such as tortoise, turtles, lizards and serpents, as well as amphibians like frogs' newts and their allies. The internal and external parasites of animals will also be shown. It is intended, besides, to illustrate plant and animal life at great depths and to show the geographical distribution and migrations of animals.

Ancient fishing implements or their reproductions will have a place in this group. The literature will include fishery laws of different countries, copies

of treaties and charters and convention dealing with international fishery relations. Special fisheries, marine and fresh water, will be fully exhibited, as also fishing stations and their outfits.

Group 123—Products of Fisheries, will be associated with models and representations of appliances for drying, curing salting, smoking, canning and cooking. The fish foods will appear in this group only when accompanied by such models and representations. The methods and appliances for preparing oils and manures from fish will also be shown in this place. Here will be arranged the oysters, clams and other mollusks, the star-fishes, sea-urchins and holothurians and illustrations of the preparation and applications of all parts and products of aquatic animals to useful and ornamental purposes. Models of fish markets and their equipment belong to this group.

Group 124—Fish Culture, will contain specimens of fish artificially propagated or introduced, illustrations of the development and growth of fish, fishery investigations of the bottom of the sea and lakes, with samples of animals and plant life, together with the apparatus and implements used in such researches.

EXTRACTS FROM THE RULES AND REGULATIONS

No charge will be made for space allotted for exhibits.

Exhibitors of manufactured articles must be the manufactures or producers thereof.

For the United States assignment of space will be to states, institutions, corporations or individuals as the case may require.

The system of awards will be competitive.

The merits of exhibits will be determined by the Jury of Awards, and will be recognized by the issuance of four classes:—A Grand Prize, a Gold

Medal, a Silver Medal, and a Bronze Medal.

Illustrations.—Photographs may be exhibited in portfolios, in wall frames, or in wall cabinets. Photographic prints should be mounted on heavy card-board 28 inches in height and 22 inches wide. For the color, court gray is recommended. Portfolios of photographs accompanying exhibits will form a very effective presentation of useful data, and will also prove invaluable to the Jury of Awards when passing upon the exhibits they illustrate.

Tarleton H. Bean,

Chief, Department Fish and Game.

Approved:

F. J. V. Skiff,

Director of Exhibits.

The Nesting of Birds.

All habits in bird life are interesting, but the home life, nest and eggs, are more apt to appeal to our sentiments. Strangely enough the collectors, as a rule, collect specimens with but little regard to the natural history of the species, and are only too often utterly deficient in the merest knowledge of the subject of ornithology. Collecting is generally a fad, and often detrimental, as it is not properly compassed. Collecting is a transitory freak of a class of youths or adults, and if properly conducted is admirable, whether followed in the line of birds or any other branch of natural history. Too many lose sight of the main points of deepest interest in collecting, by believing that the amassing of a lot of specimens is all there is in the study, whereas the deepest interest is found in investigation, and in keeping a record of observations. A well kept note book is worth more than the largest collection in the world, if the collector is unobservant as the large majority of fad collectors are.

To all I would say, do not think that the gathering of a collection of birds,

eggs, or any other class of specimens is the sole object of a naturalist. Be liberal in your investigations of nature and science, and in your rambles observe the flowers, birds and reptiles, insects and their representatives in the great field of nature. And I warn you, that if you want to continue as a lover of mother nature, that you must not neglect the various departments of interest in the field and wood. The boy who takes notes and studies intelligently, even if he does not collect, is far superior to the one who gathers a mass of specimens without any knowledge on the subject. Many there are, who, unlettered and lacking in many ways, are still observers, and with whom it is a pleasure to associate, while insipid fad collectors are often found to be utterly without merit in conversation upon the subjects with which they should be familiar.

There are very few species of birds which are not given to the habit of assisting one another, and this is especially so during the period of incubation. Over forty species of Michigan birds are known to share, male and female alike, in the duties of nest building, brooding and the care of the young. It is quite possible that all male birds lend their assistance, in some way, for I have observed co-operation in the pair in over sixty species, and am led to think that all, or nearly all, assist in all of the duties incident to nesting. Most species in the great lake region share in the care of the eggs and nest, and the male takes the place of the mother bird while she seeks food. Often the male is found to feed his mate while she is sitting, and I have observed the trait among the birds of prey, some of the shore birds, particularly the Spotted Sandpiper, and in many of the perching birds, among which the habit is well known. I have yet to learn of a Grouse or Quail feeding its mate on the nest, and owing to the nature of

the food would rather doubt if such were the case, still it is hardly fair to deny them the equal devotion of other birds. It is among the smaller species that we see the greatest devotion, because it is easier to watch their habits. The vireos and warblers are much given to attentions to their setting mates, and may be seen a dozen times a day conveying a morsel to the little hen on the nest; but as a rule, the male takes the place of the mother bird while she is feeding. All of the smaller birds, without an exception, so far as I am able to learn, follow this course of procedure, and relieve their mates in the duties of incubation, as is also followed by the birds of prey and other species of my acquaintance.

The position of the setting bird on the nest is an interesting point to study. The subject has been of great interest to me, and in the past years many observations have been made which plainly indicate that the premises of all species have their entrances and their exits. Many there are, as the kingfishers, woodpeckers and other species which reach their nests through small openings, and these of necessity must emerge from the same opening by which they enter; but all seem to have a well-defined position in settling, as we shall see.

All can recall the position of the turkey, goose and common hen and how rarely it is changed; and with the wild bird, the liability is even less. For with the barnyard fowl we can alter their posture by placing a board in a variety of positions about the nest, but with the inhabitants of the wood, any interference generally results in desertion. The Robin when building the nest, often tries how her brooding breast fits the growing structure, and this, too, when the bare platform gives no indication of the sides to follow. Later the male sits in the forming cup, and speculates on the prospects. Dur-

ing the four days of egg laying the female is not on, or rather in, the structure to any extent, unless the weather is cold or wet. It is only after the duties of regular incubation begin, a period that lasts fourteen days to a dot, that the Robins adopt a standard, followed by the pair to a nicety. The cock, who shares in the setting, when going to take his trick, almost invariably flies toward his mate in the same path, and arriving at the back door, just as his feet touch the edge, the hen is seen to dart forward between the branches, which comprise the front door. The front door, as I prefer to call it, is then the exit, and toward it the setting bird always points the bill. The Robin very rarely points the bill toward the trunk, and generally directs to an open space in the foliage.

With all birds, so far as I am able to learn, the exit is a point of observation for the setter, from which it can get a view of friends and foes. The Owls and Hawks from their elevated position can command a fine view of the surroundings. With all aquatic birds, the setter almost invariably occupies a position presenting toward the water. Shore birds, as the Sandpiper, rest on their nests in a posture to best view the pond or stream. Rails and Gallinules face the water, the latter usually building their nests so that they can plunge directly into their favorite channels. The Loon, which builds, or rather forms its nest away out from the shore in a mass of vegetable matter, often the foundation of an old muskrat house, invariably face the deep, open water. From this position it can slide into the lake at a second's notice. Anyone can prove this position of the Loon by examining the premises when the owner is away. The nest proper is merely a trough-like depression, evidently formed by the bird's efforts at hollowing, rather than by building up the sides. This oblong depression is nearly a foot and a half long, and the eggs are always placed nearly two-thirds of the distance from the front end.

(To be Continued.)

MORRIS GIBBS.

CLOSING OUT BARGAINS.

Read Them All Over Carefully, and Make up Your Order Quick if They Interest You.

I offer a few wholesale bargains this month that cannot fail to interest any live collector who has an opportunity to sell to other collectors or friends.

PURPLE SEA FERNS. These gorgeous Purple Sea Ferns always attract attention in a dealers stock. We have a fine lot on hand, which we offer at one tenth regular value. Three foot specimens at \$1.00 per dozen or four foot specimens at \$1.80 per dozen.

RED EARS. These big red ears from California, are big value at my price. When polished they bring from \$1.50 to \$3.00 each. I offer six to seven inch specimens at \$1.00 dozen or immense big ones at \$1.80 dozen.

COWRIES, Money and Ring Top. These cowries are much sought for as curios and are manufactured into jewelry. The Money is still used in barter with many African tribes. Either species, per quart, 40 cents, or \$1.25 per gallon. They are fine perfect live shells, all of them, fit for cabinet.

FLORIDA SHELLS, natural state. I offer tulips, two sized, strombus, fulgars Cardiums, and a few other kinds, assorted at the low rate of \$2.50 per hundred or five hundred at \$10.00. As you well know they retail everywhere at five cents each for the small and 25 cents for the larger kinds.

MICA SNOW, who can use a hundred pounds in swap or for cash cheap? Speak quick and let me know what you have to offer for it.

MINERAL COLLECTIONS. Who can use a fine lot of these at low prices. I have three styles which I will sell cheap by the dozen or hundred. They require an enormous amount of labor to prepare and my price will pay little or nothing for time expended, with stock thrown in.

BULK MINERALS BY THE POUND. I offer the following varieties at very low prices by the pound. Any quantity sold at this price, but of course not less than two pounds of each kind. Onyx, sawed in slices, .08, Onyx, massive chunks at .05, Pink Feldspar, fine .04, Alunite .05, Rose Quartz .05, Biotite .05, Sphalerite in Dolomite .03, Smoky Quartz .03, Geodes .05, Enstatite .04, Fuller's Earth .03, Gypsum .04, Calcite crystals in pockets, from Colorado .05, Limonite .04, Curved Mica .04, Milky Quartz .03. These minerals will please you. I will sell one hundred pounds, my selection for \$3.00.

SEA URCHINS, STARFISH, SAND DOLLARS, ETC. I am closing out my entire stock of these without reserve. 10 specimens of Starfish, Urchins, and Sea Curios, all different for

\$1.00. 25 specimens for \$2.25; 50 specimens, many kinds, \$4.00 or 100 specimens, many kinds, regular dealers stock for resort trade where teachers will see them, \$5.50. This latter collection will retail easily at three to five times my figure.

SEA CURIOS, such as starfish, urchins, squids, sea anemones, sponges, crayfish, shrimps, sea worms, Jelly fish and the like. I have five thousand specimens of these which I offer in the following quantities only. 100 specimens assorted, named, all in separate vials, corked and covered with paraffin for only \$3.00. 500 specimens for \$12. 500 specimens in formolin, each species in a jar by itself, for \$7.50. Larger lots in like proportion. No such opportunity as this has ever been offered the public to get scientific prepared material at these figures. Come quick, and get the cream of the assortment.

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The Nidologist. Vol. I Nos. 1, 2 (Sept.-Oct. '93) and 6 (Feb. '94).
The Osprey. Vol. I Nos. 2 and 4 (Oct. and Dec. '96); Vol. III No. 8 (April '99).
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The Iowa Ornithologist. Vol. II Nos 2 and 4 ('96); Vol. III Nos. 2 and 3 ('97).
The Ornithologist and Oologist. Semi-Annual. Vol. I No. 1 (Jan. '89).
The Journal of the Wilson Ornithological Chapter of the Agassiz Association. Vol. I No. 2 ('93).
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VOL. XIX. NO. 8

ALBION, N. Y., AUGUST, 1902.

WHOLE No. 191

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TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

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A Day in the Marsh.

Any one who has not had the opportunity of searching in a marsh can not imagine how slowly progress is in the unbottomed mire among the tangled

mess of bushes and different kinds of swamp grass, etc. My first day was that of June 11, 1898. My cousin (Mr. Doolittle) and I had planned to go to a large marsh known as Mentor Marsh, which is a place supposed to have been the old bed of Grand river; it began a short distance from Lake Erie, ran along side of the river a little ways, then turned and ran almost parallel with the lake and finally emptying into Lake. Some parts of this marsh is covered with woods and comparatively dry, other portions contained bottomless and black bayous, and other parts are covered with a dense growth of bushes. Where marsh emptied in, lake was covered with different kinds of swamp grasses, and there is a deep, black creek running through the center of this portion.

After packing our eatables, cigar boxes with plenty of cotton, pencils, note books, etc., I put in an extra pair of pants for wading around in marsh and then we were ready to start. The place we were going to was the last portion named, and was a distance of about seven miles. We were carried in a buggy about half the distance, leaving us to walk the rest of the way. By running a little way, we reached there just in time to avoid getting a good soaking. We went into an old barn and began at once to gather up bits of straw to make up our nest.

It stopped raining in a little while and we began a short search for Long-billed Marsh Wrens, which were very common, and we found it had rained so much that the water was about a foot deep all over the marsh, besides the channel was filled up with sand,

leaving no outlet. However I found several nests of the Wrens, but none of them contained eggs.

We searched out a Least Bittern, and saw a Virginia Rail skulking around among the grasses on edge of marsh, but found no nest of either; by this time it was getting dusk, so we determined to eat our supper and prepare for the night. In going back, we ran across a boy who lived near by, and we asked him if any one would have any objections if we stayed in the old barn that night, and he told us of an old house, which had formerly been used for a club house and that nobody cared who stayed in it. We found when we reached this house we had struck a snap, there were bunks with plenty of straw, and the boy let us take a couple of blankets, and if it had not been for mosquitoes we could not have slept more comfortable that night.

After eating our supper, we listened to the birds a little while, and if we had not been true lovers of nature we would have thought we were in a haunted place. The boom of the Bitterns, the different noises of the Rails, squawk of the Green Heron, the croak of the Great Blue Heron, saucy note of Marsh Wrens, and Blackbirds, croak of frogs, and worst of them all the hum of mosquitoes, all joined in the concert together.

Just as soon as day break we ate a hearty breakfast, and were soon ready for the marsh; I put on the old pair of pants I had brought, picked up an egg box and started, and as there was another short marsh that connected this in another direction, and as we wished to get on the lake side of the marsh, we had to go around this. In going around I took a set of four Song Sparrow eggs in among some briars, and a set of three Red-eyed Vireo in a small woods.

When we reached the beach we found several sets of Spotted Sandpiper; we took two sets apiece, leaving the rest to

hatch. We found in a bank, over a thousand nests of Bank Swallows and dug out several nests which either contained badly incubated eggs, young or incompleated nests, and we never took a good set of them.

After searching in the marsh a little while, and finding nothing, decided to go back to camp; as we said we would never go back the way we came, we thought we could cross a little above, it looked like a comparatively dry woods and we not knowing at that time it connected all the way.

My cousin went along on top of the bank of marsh in the woods and I kept along the edge, going into it wherever I thought a likely place. In taking different courses we got separated from each other. My cousin being at top of the bank of marsh, could view the whole thing and thought it easier to go back the way he came, and I, not knowing where he was, commenced to cross. Where I started in I found it too wet, and kept on going up expecting to find a better place, and in looking around I found a set of six Yellow billed Cuckoo, one egg of which was undoubtedly that of the Black-billed, being a little darker and smaller.

After packing up the eggs and writing the notes, I continued on searching for dry land; after walking in the tangled mess of briars, bushes and willow saplings for about half an hour I began to wonder if there was any end. I climbed some of the highest saplings and cou'd see nothing on either side but a desolate mass of tangled saplings. After walking in this place for about an hour and a half (it seemed like five) and climbing trees, I at last found an edge, but was uncertain which edge it was, I was so completely lost, but found out afterwards it was the side I wanted. Oh, what a sight I was, one pant leg gone clear up to knee, and other leg torn to shreds, and not a square inch on my legs but had at least a dozen

scratches on, and shoes went swash, every step I took.

In going across a field I ran across some men picking strawberries, and asked them how far I was from the old club house, and they said about a mile and a half. I got back to the house before my cousin did, and leaving the box that contained the Cuckoo's eggs, I went out to look for him. Not seeing anything of him I went back to the old house, and to my surprise I found him there. He said he saw the boy that showed us the old house, and he said that no one ever crossed the swamp. My cousin felt sure that I would try and cross, and when he saw my box and wanted to be sure that it was the box I took with me, he looked in and found an egg of the Cuckoo and thought it was an egg of the Least Bittern. He had taken a set of three Yellow-billed Cuckoo and had calculated to fool me, making me believe they were Least Bittern, but got the joke on himself instead. When we had eaten our dinner and rested a little while we blowed our eggs, packed them up and started for home, saying we had enough marsh collecting for awhile.

RAY DENSMORE, Perry, O.

If Not, Why So?

(concluded.)

When a person sees another shoot out and ascend high above him in the realms of knowledge, his generous, self-sacrificing temperment prompts him into expressions of admiration, happy congratulation, encouragement, etc. The opera glass advocate never killed, trapped, or kept wild birds in captivity; hence he is in a position to criticise the Ornithologist's motives with a depth and breadth of comprehension that is appalling. He also never robbed nests and so does not know that most birds waste little time in mourning the loss of their eggs, often having a new nest

constructed inside a week, or that it often happens if an egg is touched or even if they know their home is discovered they will desert it. This does not argue well for the affection and heart-rending grief of the bereaved parents as he depicts it, often comparing to the woe of a mother deprived of her child—a human being endowed with reason and memory and who usually mourns such a misfortune during life. It would seem as if his exaggerations were knowingly committed in order to strike the harder, for no one is entirely lacking in common sense. That the Ornithologist understands, does not in the least disturb him for he succeeds in impressing the remainder of the world with his wisdom. His is the popular bird study, reaching out into classes of people who but vaguely know what an Ornithologist is; hence he possesses their regard and confidence and it is here he does his criticising. His importance is very like that of a Congressman—a great man among his constituents at home but when he gets to Washington—well, he is not quite so great. We must now drop the opera glass advocate * but as the Ornithologist is the hero of this thrilling tale we will let him remain awhile.

Truly scientific men in all branches of science will stand by the Ornithologist because they can gage true value, but aside from these his popularity is

* It should be understood that under head of opera glass advocate we included all those who study birds without recourse to the Ornithologist's villainous methods, and also that we accuse this class of neither indolence nor lack of intelligence. It is true, they have chosen a field almost free from anything like labor, but the fact is the majority work hard at various occupations and indulge this pastime as a means of rest and recreation. Bradford Torrey spent his holidays in idle wanderings about the country long before he became interested in birds, and apparently nomadic inclination is still the ruling influence. Who could conceive John Burroughs returning from a long, weary tramp, peeling off his coat and working far into the night on bird skins; but one could easily picture Robert Ridgway thus employed. A person with a highly intellectual brain usually regards such a possession as an excuse from manual labor. Coues had the brain, yet was not afraid to prepare birds nor at all backward in advising the be-

not to be envied. To the average mind he is not only engaged in something they do not comprehend but something very few follow—hence he is a crank. Did he devote equal time and energy to reading they would pronounce him wise, and even if his intellect was of wooden Indian brilliancy he could yet retain his reputation by keeping his mouth shut. The opera glass adherent also gets his share. They credit him with insanity. He wanders about just to look at birds, a thing no sane man would do. The Ornithologist escapes this honor because he carries a shot gun and “stuffs” birds—they can understand that; but to return. Some of the Ornithologist's friends, who believe him to possess talent and brains, deeply regret the step he has taken for they regard it as a total waste and point out what he might have done. To others he is gleanings of knowledge along certain chosen lines of no benefit to anyone except himself, thus working out his own selfish ends at a sacrifice of innocent life. They have forgotten that they were sent to school and later continued their studies for the sole purpose of improving number one and no one else. It is true that a great deal of his knowledge will never be imparted to the world for a person may know a certain section of country well but can not make another equally familiar by mere description—that other must go over

ginner to shoot all he needed. A well known and popular bird writer has told us all about the captivating ways of the dear little Horned Lark, but either did not know, or deemed it unnecessary to state that the bird belonged to the Desert variety. Probably she would exclaim, “A Horned Lark is a Horned Lark and that is all we bird people care to know.” So is a man a man, but in reading his biography it is interesting to know whether he belongs to the red, white or black variety—of course this is only the Ornithologist's point of view. An article in the *Outlook*, written for the amusement and instruction of children, takes the glad young reader by the hand and leads him to where he can peep down the chimney and gaze upon the chimney swift's cozy nest lined with feathers and straws upon which is the lovely, glossy backed, fluffly breasted mother, covering her “freckly speckly eggs.” Evidently a little more knowledge would not hurt this writer. His next step will be to criticise the Ornithologist,

the actual ground. He also has an unkind way of treating all criticism and advice with absolute indifference thus counting general disapproval on the ground of prevalent but by no means acknowledged opinion that a man has no business to mind his own business; now to leave him for a moment.

Of all classes interested in birds, the sportsman stands nearest to the people, in fact, is of them. Fire arms are familiar to all and have a numerous following, hence their use seems very natural and proper. Of the number of birds annually killed, the sportsman can claim an ascendancy over the Ornithologist reaching far into the thousands. In some places he has been obliged to restock the country or forego the pleasure of shooting. He is a power, and game laws are adjusted to suit him but being of the people there is little difference of general opinion. Self interest is the ruling power with us all. Some birds serve man best killed and dressed, others by their song and beauty; hence the former may be killed at certain seasons and the latter are protected the year round, while a third class possessing the merits of neither, are not protected at all. Only a brother sportsman has a right to kill birds. If a hawk presumes it must be shot and he who robs a game bird's nest should be hung. When a boy, the writer was threatened with the law because a rumor got afloat that he took four Woodcock's eggs, and only proof was wanting to execute the threat. “Just think!” exclaimed the indignant sportsman, “that young imp has destroyed four Woodcocks I might have shot this fall.” Those eggs are still in existence. We find discord among lovers of the chase as elsewhere. First comes the game hog. The sportsman who lives where six bird is a lucky day calls the one who boasts of getting twenty-five a game hog. Jealousy and resentment tend to promote and

strengthen the beautiful ties of brotherly love. Now should this first sportsman move into the twenty-five district he immediately brings the limit up to that number. So you see the game hog is not well defined. However, one thing is certain—he is always the other fellow. Then all hunters are not sportsmen. The hunter's instinct is so strong among a certain humble class as to render them fit to gain a living by hunting only. They are looked down upon as beings mean and lowly and called market hunters. When the sportsman returns from a successful hunt he advertises his generosity and skill by distributing the game among friends, but the other can not afford to do this and sells, thus proclaiming himself no sportsman. Then there is this market hunter's point of view but we dare not further encroach upon the readers time and patience.

So realizing the chaos of varying opinions that surround him it is no wonder the Ornithologist is indifferent and relies wholly upon his own judgment. Were he to take a hundred people at random and decide to do exactly right according to the advice of each he would discover the existence of a hundred different ways of doing exactly right in no other way. He has somehow conceived the idea of freedom in the land, and shoots what birds he wants and takes what eggs he wants and conducts personal affairs to suit himself. People think nothing of rearing trusting little chickens to be slaughtered, yet many of them condemn the Ornithologist's bloody work. Inconsistent as this may seem he is not offended because he knows them to be voicing what they sincerely believe. He simply understands and makes due allowance for the weakness of human nature. As all of us are more or less smitten with superstition and susceptible to flattery—although we seldom admit it—so are we influenced by popu-

lar opinions and customs. Sinful as it may be a woman can put birds on her hat and add a few artificial flowers and look like an angel. Let man put birds and flowers on his hat and he looks like an ass. We will now close in rhyme.

Jones bought a baby eagle, and to pass
the time away,
He kicked and cuffed the helpless bird
some twenty times a day.
He nearly cracked its infant skull and
broke its neck in half
And to its screams of fear and pain he
would merely grin and laugh.
He assaulted it with an Indian club and
beat it black and blue,
And scarcely noticed that each day the
bird a little grew.
One morning he took a raw-hide whip
and hit it hard and slick;
The bird answered not a cry but did
something mighty quick.
A tearing, ripping sound was heard;
Which was Jones? which was bird?
Someone enjoyed a heap of fun,
Someone round like a pinwheel spun.
Someone was on vengeance bent,
Someone's hide by claws was rent,
Someone's heels went in the air,
Someone landed everywhere.
Someone's head the earth did smite,
Someone lay in inky night,
Someone awoke and slowly upsat;
"Great Caesar!" cried someone where
am I at.

Someone's doctor found him dead by
half,
Someone recovered but had ceased to
laugh.

Moral—The ornithologist is a healthy
infant and growing every day.

J. CLAIRE WOOD,
Detroit, Mich.

The Nesting of Birds.

In a large number of the nests of the
Brown Pelican, which I examined on
an island in Florida, all gave evidence

that the old birds sat in one position, usually with the front to the water. In the case of the Ruffed Grouse and Bob-White, the position occupied while on the nest is invariably that which gives the best view of the surroundings from the more or less concealed retreat. Who ever learned of a Grouse's nest where the setting bird faced into a brush pile, or toward the stump or log? The arboreal sparrows, vireos, and many other small birds usually sit on horizontal limbs with the head from the trunk, and when the nest is much elevated the position is usually chosen so that the sitter will face the prevailing wind. Birds will nearly always, whether on or off the nest, face the wind; and if observations are taken it will be found that nearly all setting birds face in one direction, that is, against the wind.

Some birds are very particular in regard to the privacy of their homes, and this feature of retirement is often common to all the birds of a species. Again, there are many species which will receive visits and most any kind of abuse and still remain constant to their nest and eggs. I have caught a Bluebird in my hand as she sat on the eggs, and then the eggs were regularly hatched. Repeated instances are known where the Golden-wing Woodpecker has been removed from the eggs by hand, after which she would return and lay again in the same nest. Nothing seems to daunt this bird in her efforts to occupy a cavity, and there are many instances where as many as twelve eggs have been laid, each egg being taken on the day it was deposited. I have removed a Black-capped Chickadee from her eggs in a hole, and when she was released she at once flew back in the cavity while I was within two feet of the stump. These little titmice are the most familiar, and perhaps all-around social creatures that I

have met with in my trips among the birds.

Birds are not nearly as liable to desert their nests as it is claimed, and with a few exceptions the birds that I have studied are very constant, not only to their nests and eggs, but to a locality, returning year after year. Strangely enough, many species of the wildest birds as the hawk and owl, will submit to repeated visits and partial abolition and still continue to occupy the nest. I have known instances where a Red-tailed Hawk's nest has been climbed to at least three or four times during construction and the deposition of the eggs, and yet the pair remained and finally hatched their eggs. I have changed eggs of the Spotted Sandpiper and Killdeer in their nests; that is the position, and the birds would rearrange the clutch. One of our commonest birds, the Chipping Sparrow, is much given to resenting interference, and will often leave its nest on the slightest provocation, a habit I have often observed. But again this little bird will permit of the closest inspection, and it is so often found nesting on the piazza vines and plants that it has been called the "porch sparrow" an excellent name for this familiar little creature. The vireos are very resentful of interference, and some of the warblers are much inclined to leave the nest if it is touched or sometimes even looked at. On the contrary, the swallows and the familiar barn Phoebe are very persistent in their allegiance, and will accept most any impositions apparently without complaint. That little yellow meateur, the Yellow Warbler, is much inclined to retirement, and will leave its nest on the slightest molestation by man. This is the more remarkable when we find that the active fellow is the most persistent of all the birds against the encroachments of the cowbird, that insistent advocate of founding's homes. It is a fact all birds are

less liable to leave their eggs if they are advanced in incubation, and many species that will resent any interference by leaving the nest in the earlier days of incubation, will often submit to imposition without desertion when the eggs are about ready to hatch. In one instance a Ruffed Grouse was annoyed to a great extent by the visits of the neighboring boys, and the result was that the eggs were addled, yet the old bird was so devoted that she continued to set for some time after the allotted time, and after she finally gave over in her efforts at a thankless undertaking, the eggs were found intact in the nest but without signs of development. Truly this was a lost labor of love.

Many species of birds, will, when forced by stress of circumstances, drop their eggs in the nests of other birds; and I have found this to occur in the case of seven species, as follows: A Redwing's egg in the nest of a Hooded Warbler; a Mourning Dove's egg in the nest of a Robin; a Cedar-birds' egg in the nest of a Kingbird; a Phoebe's in an Eave Swallow's; Carolina Rail's in a Virginia Rail's, and vice versa, and a Cuckoo's, the Black-billed, in a nest of the Yellow-billed. This list is aside from the Cowbird, which never makes a nest of its own or cares for its own eggs or young, to my knowledge; neither does it include the so-called English sparrow, which lays its eggs on all occasions, and in all locations, and it would not be surprising to find an egg in a contribution box at a close communion church. When birds lose their own nests, they will not rarely make a deposit in the nest of most any convenient neighbor, and this freak as we may call it, though it were better to call it a wise bit of reasoning, has led to the finding of at least thirty kinds of birds depositing their eggs in the nests of other birds. Others, as the ducks of several species, deposit whole sets of eggs in common in a nest with an-

other duck's eggs, generally of the same species, but not rarely of a different kind, as has been repeatedly verified. This has been repeatedly observed in nests of the Canvas-back and Red-head ducks, the females of which not rarely lay in a common nest, covering the eggs with down as is usual. Sometimes it is the Red-head that is flushed from the nest, and again, the Canvas-back, but it has not been settled that both females are known to incubate the same set of mixed eggs: but I should not think it surprising if this were found to be so.

Besides the birds which are forced to the shift of occasionally depositing in other's nests, and the ones which have the partial habit of baby-farming, so to speak, as the cuckoos and ducks, there are many others which are strictly in favor of home rule and the care of their young, yet who are willing to occupy the houses of others. Among these we find, first, the birds which are willing to take up with old deserted quarters; second, those renting property, as it were, on a time lease; and third, those masters of the situation who dispossess the rightful owners and occupy the premises for their own family. In the first list, which is the largest, we find all the many species which are incapable of drilling holes with their bills, as the Bluebird, White-bellied Swallow, Great-crested Flycatcher, House Wrens and others which select among other places for their nests, the deserted cavities of Woodpeckers and Nuthatches. The imported sparrow is also in this; in truth he is in every list and is ubiquitous. In the second list—the renters, we find numerous instances where the Great-Horned Owl takes possession of a Red-tailed or Red-shouldered Hawk's nest before the rightful proprietor has returned from the South and rears a family, and then perhaps gives it up the next season. It is even said that both species have occupied the nest

successively in the same season, but I do not credit this story as the owl does not leave the nest with its young until after May 1, and that would not suit the hawk's views, as it usually begins nesting in March or early April; still it is possible.

In the third division we find the English Sparrow in full force, and if there is one factor in the driving of our city birds from our parks and yards it is the pugnacity of this despised interloper. Yet in the face of all this we cannot but admire the imported nuisance, for the aggressiveness with which he holds sway over the carefully protected birds of our land. In addition to driving the Martins from their boxes and the Bluebirds from their cavities, and the many other birds from the dooryard, we find him in the country as well where he takes possession of the nests of the Phoebe, Eave and Barn Swallows. It is interesting to observe a pair of Sparrows, occupying a mud house in a row of Eave Swallows nests. The irascible fellow appears contented wherever he is located and always makes himself at home. I do not recall an instance where one of our native small birds building in the open has been dispossessed of its homestead rights, but cavities are often in dispute. Years ago when the Bronzed Grackle was in the habit of laying its eggs in the hollows of dead trees, I have seen this big shiny bird drive a pair of blueblack swallows from their possessions in a dead stub. The Short-eared Owl has a penchant for building in the nest of the common crow, and after nicely lining it with feathers, defends it against the sable owners. A Sparrow Hawk has been seen to drive a pair of Flickers from a cavity that they had occupied for years.

Some birds will build their nests over other nests; even those containing eggs

of the same species, and again over eggs of different species. The imported sparrow is much given to both of these oddities, but of our native birds the only ones in which I have observed the peculiarity are the Blue-backed Swallow and common Bluebird, in addition to the second-storied nests of the Yellow Warbler, which often builds a second nest over the unwelcome additions of the Cowbird. I once found three more or less complete sets of eggs of the Bluebird in a single cavity. Such an occurrence can only be accounted for in one way; the cavity was first occupied by a pair of birds that was driven out after the eggs were deposited, or perhaps the birds were frightened or destroyed. A fresh set of eggs was then laid by pair number two in a nest built over the first one, and for a second time the cavity was deserted. Let us hope that the first pair rallied and again took possession of the cavity. The cavity in question contained three nests, occupying a space from the bottom upward or over eight inches. The lower set of four had lain cold and deserted for a month; the nest set above was at least two weeks old, while the upper set was in process of incubation when discovered. The locality was a field which had recently been cleared of most of its many stubs, and which had formerly been much frequented by the Blue birds. On their return in the spring the birds had found the accommodations much curtailed, and in their desire to remain and nest in the neighborhood entered into a neighborhood struggle with disastrous results. In one hollow of a tamarack stub in the marsh, we found a finely feathered nest of the Blue-backed Swallow containing six eggs, and beneath this another nest held five addled eggs.

(To be Continued.)

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THE OÖLOGIST.

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TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

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The Birds of Death Valley.

BY HARRY H. DUNN.

On the sixth day of last November, I left Los Angeles for Johannesburg, a rapidly diminishing mining camp some

250 miles out on the Mojave Desert. My ultimate destination was that weird, much-lied about country known as Death Valley, but the railroad penetrates this arid region no farther than "Joburg," and there I was to join the rest of the party for a two months trip. Now right here I am going to drop the thread of my tale and locate Death Valley fairly in the minds of my readers. The Great Basin of the United States has four distinct sinks or drainage basins. One of these has its deepest point at the Great Salt Lake, another at Mono Lake, and still another at Salton sea. Now the fourth is Death Valley, which you can easily find plainly marked on almost any map. This valley is about 75 miles long, by from seven to twenty-five wide. It is the sink of the Amargosa River, but is so heavily encrusted with saline deposit (salt, borax, alum, soda and nitre) that the water, save for certain isolated springs, is unfit for drinking. The valley was so named on account of the fact that in 1850, a Mormon emigrant train, crossing from Salt Lake to Los Angeles, came near perishing to a man, in fact only a few escaped over the mountains into San Bernardino. The principal vegetation of this country consists of mesquite brush of two kinds, the twisted or "screw" mesquite, and the "tree" mesquite. The former of these two is very dense and equally thorny, forming an excellent cover for wild rats, with which this country abounds. The valley, being some 400 feet below sea level, is surrounded by lofty and precipitous mountains whose varied mineral hues belie the rainbow.

We loafed around Johannesburg

awaiting our teams and supplies until November 11th, when we bade a lingering adieu to civilization as represented by the hybrid saloon-hotel at which we had been stopping. About the first birds I saw after leaving town were Linnets. They seemed to be everywhere, filling the quiet desert air with noisy chirpings and even some attempts at song. A single Mocking bird, the only one I saw on the western side of Death Valley, made his home in the little town we were leaving, and his daily oratorio followed us as we left. Bird life—other than the Linnets and a solitary pair of Ravens—was very limited until we reached Blackwater wells, where a few White-crowned Sparrows were scratching about among the brush. Here, too, we saw a solitary Jack-rabbit, which went off on a tangent as if the whole world were after him. These wells—though there is water in but one of them now—were dug by General Wingate nearly half a century ago when he passed through this region in pursuit of renegade Indians. Before they watered our horses at this place, the men took forty-six dead rats out of the well, in which brackish, slime-covered water stood about five feet deep. How the birds get water here I could not see, but from the number of small birds gathered around, I judge that it forms a watering place for whole counties full of them.

At Granite Springs, our next stop, where we spent the night of this first day, we put up a bunch of quail. Someway these little blue coated fellows always seem like old friends to me, especially when I meet them in a far-away corner. I suppose these were our common Valley Quail—though they may have been Arizona Quail, of which species I will speak later. Here too, I found feathers of the Big Horned Owls, and heard their sonorous “who-who-who, who,” with the third syllable shortest and the last two uttered very

close together. “Back east” I have heard my elders call them “hoot” owls, but since I have grown to years of ornithological discretion, they are known to me as *Bubo virginianus pacificus*—but, gentle reader, I’ll promise not to throw any more chunks of Latin about promiscuously. Little Rock Wrens were not uncommon among the huge boulders of Pilot Butte, and I saw a Roadrunner dodging about in the scrub below camp. The Ravens seemed to have made up their minds to stay with us “for better or for worse.” They perched on the rocks a few hundred yards away but seldom came within shotgun range. They stayed with us all the way through to the Nevada line and back again, leaving us, on our return trip, at this place. Every time we pulled out of a camp—even if only after our midday meal—this pair of sable satellites settled down for a feast on the refuse which we left. About half an hour after we had left camp, here they would come, flapping slowly along in our wake. At last they became so friendly that Colonel Bailey forbade any one shooting at them.

At Leaches Point—two days march farther on—I saw two or three of our common Mourning Doves, while down among the willows about the spring were four or five Goldfinches, though of what species I did not ascertain. The water was the best of any we had on the trip, evidently coming through a fissure in the solid rock for a long distance. At this place, the lofty and precipitous mountain walled in our camp on three sides; on the fourth, the rolling table land sinks away to the creek bed. From the very center of the mountain side mentioned above, a huge rock some sixty feet in height, projects. This rock is a very accurate likeness of an elephants head, the trunk, tusks, eyes and ears appearing with remarkable fidelity to nature. That this was carved by the elements seems prob-

able—yet man, and man who knew something of such huge monsters, may have had a hand in the work. If any aboriginal Phidias cut this master-piece from the living rock, then, whence did he come? What was his mission? Whither did he go? Like the little boy's question of: "Who is God, mama?" These queries will probably go forever unanswered. I remember seeing a huge Turkey Buzzard settle down upon this petrified leviathan's head one evening and compose himself for sleep. What a train of thoughts the arrival of this somber-plumed bird brought up—thoughts going back, back over the years until they lose themselves in the abysmal mists of the world's nativity.

Early next morning, as we were preparing to leave camp, I heard the shrill scream of a Sparrow Hawk as he wheeled in dizzy circles about the upper crags. That day we pushed on to Owl Springs, a lonesome little water hole on the very rim of Death Valley proper. From here we could see the white borax marsh which covers the bottom of this sink, and thirty miles across this bottom, the myriad hues of the rich Funeral mountains stretched like some multicolored ribbon along the horizon. Few or no new birds were noticed here, but on the next day when we reached Saratoga Springs, "the Sargeant" (so nicknamed on account of the suit of Khaki which he wore) brought in a brace of ducks as proudly as any Kentucky boy ever did his first wild turkey. They were Baldpates or American Widgeon, but a further and more extended exploration of the pond adjacent to the springs resulted in the discovery of a diversified avian population. Shortly after the wagons pulled into camp, I unpacked one of the shotguns and taking a few shells started out to make a circuit of the lake. A Mountain Song Sparrow hailed me cheerily from his perch on a swaying reed, and two or three noisy little Tuli

Wrens rushed into cover as I crashed through the flags in making a short cut to the water. Several other small birds scurried through the salt grass growing back on the flat, but I did not shoot any so do not know what they were.

The belt of cat-tails and reeds which surrounds this lake is rather wide, but when I did at last come to the water's edge, the pond was literally covered with Mud Hens or Coots—if there were a dozen there were five hundred, and all squawking at once. Such a racket as they made, swimming about in the open water, and disappearing now and again into the tules which bordered the pond. At the north end of the lake a band of seven ducks, either cinnamon or green-winged Teal, were feeding slowly up and down. A flock of Mallards, fifteen or twenty strong, came down close to the water, but, seeing me, used wings, and feet and tail to get themselves out of danger, going over the Funeral mountains to the flats of the Amargosa or to Furnace Creek.

Of Hawks I saw two here, Coopers and the Duck Hawk, both evidently on the lookout for ducks. Later in the day one Shoveller was shot on the pond, and a Kingfisher was seen perched on a dead snag at one end of the lake. The common little black Phoebe, or Pewee, so plentiful around our barns here in Orange county, was there also, while—though the time was late November—several Meadow Larks were seen in the grass back of the springs.

Here, too, we saw a pair of Prairie Falcons, one of the most rare and beautiful hawks in California. Farther on, along Willow Creek, I saw two nests of these birds placed on ledges more than a hundred feet up on precipitous cliffs.

At this place we stayed only a few days, going thence up the Amargosa River to its junction with Willow Creek, and then following the latter up to the China Ranch, remaining there ten days or more. While at this ranch,

I saw, for the first time, a flock of Arizona Quail. These birds differ from our Valley Quail in having more black on the head, and a reddish belly instead of the blue-gray underparts possessed by our bird. These are also known as Gambel's Quail. Here I saw specimens of the Kingbird—common throughout our lowlands in summer—which were evidently spending the winter in this more equable climate. A black Flycatcher—the Phainopepla—was here also, as well as two or three Woodpeckers and dozens of Audubon's Warblers. A saucy Butcher Bird spent most of his time about the alfalfa lot catching grasshoppers, which even at this late date were plentiful all over the country. There were several Towhees here scratching about among the underbrush, but I did not take the trouble to shoot any, so cannot give their names. Dougherty, our guide and head teamster, shot a fine male Swainson's Hawk from his perch on the summit of one of the highest nitre hills.

My list embraces some fifty or sixty species, but I think I have told you enough of the more interesting species to enable you to see that Death Valley, barren as it is, is not devoid of interest to the observing traveller.

An Usurper.

From the collectors point of view Cowbirds are a nuisance, for many an otherwise fine set of eggs has often been marred by the addition of one or more of the eggs of this species.

The female Cowbird is not at all particular in her choice of a resting place for her eggs, and the nests of birds as large as herself or much smaller are chosen, regardless of the stage of incubation of the eggs in the nest, should there happen to be any.

Owing to the excessive amount of rain, and the cool cloudy days during the earlier part of the spring months,

the nesting season was long delayed, much to my disappointment.

Ground nesters, especially, were so hindered by the frequent heavy rains that it seemed as if the season must pass without their raising a single brood. But as the spring faded into summer, the rains gradually lessened in number and violence, and the nesting season was at its height.

On the fifteenth of June, while searching among some low hazel-nut bushes on the side of a hill, I found the nest of a pair of Towhees, or Chewinks, commonly called (*Pipiloerythrophthalmus*). The nest contained, at this time, a two-thirds grown Cowbird and eight eggs of the same species, in all stages of incubation, from nearly fresh to fully developed embryos.

At the first glance, I thought them to be eggs of the Towhee, but upon closer examination they were all found to belong to birds other than the builders of the nest.

The ground around the nest was covered with leaves to the depth of an inch or more, the nest itself, (in a slight depression in the ground) was composed entirely of leaves, and was built underneath a wild vine of sort, which gave to the whole a very pretty and artistic appearance.

Both the male and female Towhees came into view while I was examining the nest and its surroundings, and kept up a constant chirping at my intrusion, but at no time did they come within a dozen yards of me, they seeming to prefer to keep to the topmost branches of a birch tree some distance away, and out of reach of any impending danger. After photographing the nest and its contents I came away.

In the latter part of June I paid the nest another visit, the young usurper had probably followed its foster parents to higher ground, but the nest still contained the eight unhatched eggs, all of which I threw away.

I searched diligently for more than half an hour among the low shrubs and bushes for the late owners of the nest, but not a sign or a sound of a Towhee did I discover.

I presume the young Cowbird had grown quite independent during the interval between my visits to the nest, and had left its foster parents and was associating with others of its kind.

Glen M. Hawthorn,
Cedar Rapids, Ia.

The Nesting of Birds.

There are few species of birds that build two or more nests each year though only one is occupied by the female with eggs. These extra nests are called "cock's nests" in England, but I do not think that the name is fully applicable, as the mother bird not rarely assists in their construction, as I have repeatedly observed in the case of at least two kinds of wrens. The wrens are much given to this peculiarity, and a careful study of the subject has fully satisfied me that if undisturbed the birds will always attempt this extra nest building. The idea prevails that the cock bird employs his time in this "expansion of possessions" while his mate is setting, but that this is not always so I am prepared to prove, as I have seen both birds busily engaged on a nest, when there were not any eggs in the locality, and yet there were eight partly constructed nests within a circle of thirty yards, and all due to one pair of Long-billed Marsh Wrens. It is fair to say that this species constructs at least seven or eight mock nests to one in which the eggs are laid, and the eggs are often deposited in very slimy excuses for nests when much better ones are standing idle within a few yards. We found a group of twenty odd nests, all evidently the work of one pair of birds, and only one of these contained eggs. The

Short-billed Marsh Wren is also given to this peculiarity, as well as the House Wren; the latter often making as many as five nests in the vicinity of the inhabited one, when cavities are at hand, and I doubt not that this well-known bird would fill a dozen or more spaces if they could be found conveniently.

The Florida Gallinule often builds an extra affair, sometimes two or three of them in the marsh near to the nest containing the eggs. In these cases the nests are nearly always poorly made and not to be compared with the home nest. I have always observed the habit to a lesser degree in the Carolina and Virginia Rails. Of the other birds, the only ones which I have thought were given to this habit of constructing nests needlessly, are the Yellow Warbler, Trail's and small Green-crested Flycatchers; and I have not fully satisfied myself as to an established habit in a single case.

In building nests, birds often steal material from one another and I have had repeated proofs of this. The vireos, especially the Red-eyed and Warbling will remove nest materials from the hanging structure of the Baltimore Oriole. The imported sparrows are the greatest thieves, and there is no limit to their depredations. Barn Swallows will take feathers from one another's nests, and I have seen Blue-backed Swallows pilfer feathers from the cavities occupied by Bluebirds, as well as from the nests of their own kind.

Many species of birds are very prodigal in the use of materials in nest construction, and spread the timbers all about their homes. This is especially noticeable in the case of some of the hawks, more particularly the Buzzard Hawks, and I have counted over two hundred sticks beneath a tree containing a Red-tail's nest. The ground under the trees which hold a colony of Herons is often found to be covered with twigs and sticks of all sizes. The

Hérons may at times pick up these sticks, but I have not seen any evidence of it, and the birds are always seen bringing twigs from a distance, seeming to utterly neglect the fallen twigs. It may be that the material that is seen on the ground is all rejected timber, but this does not seem reasonable. The litter beneath a colony of nesting pigeons is remarkable, and an abundance of twigs is found on the ground in every direction, yet the birds continue to carry in nesting materials, although there is ample to build hundreds of nests lying all about.

Some species of birds hide their nests in a very thorough manner while others make no apparent effort at concealment. The Bobolink is perhaps the best hider of any of the common birds, and there are many collectors who have never met with a nest of this species, even after years of experience in the field. The Bobolink's nest is most carefully concealed; the effort being to hide the nest and all from observation. On the contrary the Blue-gray Gnatcatcher makes no effort at concealment, evidently relying on protective coloration for its security from observation: and this is largely successful as the nest is very rarely discovered, excepting by the most careful students. There are many other species which conceal their nests and in a great variety of ways, but it is of the exposed eggs without covering and in prominent situations that we take the most interest. For instance the eggs of the Woodcock and Nighthawk are laid in plain sight, yet they escape observation from nearly all strollers, even when search is instituted. It is a fact that the exposed eggs are usually spotted, supposedly for their protection, but this is not always so by any means as we will quickly show by calling the attention of observers to the white eggs of the Mourning Dove, Least Flycatcher, Hummingbird, some Owls, and sev-

eral other species, and the nearly white eggs of the Vireos, some of the Warblers, and others. Neither is it so that the eggs laid in cavities and burrows are generally white. Let me call attention to a few well-known exceptions: The following species all lay their eggs in hollows or burrows habitually, and yet they are colored and mostly speckled. Bluebird, House Wren, Long-billed Marsh Wren, Creeper, Prothonotory, Warbler, Eave Swallow, Nuthatch, Titmice, Great-crested Flycatcher, Sparrow Hawk, and many other kinds. Rules of this kind are generally found to be beset with exceptions.

It is astonishing to what a degree birds are affected with parasites, both externally and internally. There is not a species that is exempt, and even the aquatic birds are invested as an examination will convince any investigator. Birds of a class, sometimes of a genus, or even species have their special parasites, sometimes of several species, and always as many as two kinds. Naturally enough the insects become a nuisance in the nest where they quickly become attached to the young. It is remarkable when we consider that the strictly insectivorous birds, as the common Yard Phoebe and Barn and Eave Swallows are among the most afflicted birds in this respect. Swallow's and Pewee's nests are often found to be creeping alive with these parasites, which in some instances kill the young in the nest. The swallows and other insectivorous species do not seem to feed on these mites, and the pests multiply to a great degree. It will be noticed that the proprietors of a nest will leave it after the first brood is hatched and will build another nest for the second brood. I have observed this trait in the Phoebe many times, as in several other species. Sparrows, especially the imported ones, will wallow in the dust to rid themselves of the

parasites and I have observed the habit in the Grass Finch as the little fellow wallowed in the dusty ruts in the highway. But the Pewee and Swallows do not follow this method of riddance and are sadly afflicted. Some birds as the owls and larger hawks are invested with a large fly which burrows in the plumage. All of these parasites are persistent attendants on the birds which they have adopted, and no one need be in fear that the midges, mites, etc., will leave their choice and attach themselves to human investigators. For all the jumpers and flyers will return to the bird of their choice, after the manner of the flea to the dog and tick to the sheep, for all parasites have their preferences, and that it is well-founded is fortunate for us. Not rarely insects invade bird's nests and devour the young. It would seem that the old birds might stop the onslaught, but in most instances they appear helpless and are often driven out themselves. In examining a Chickadee's nest I accidentally broke into an ant's nest and thereby exposed the young to an attack of these little pirates. The old Chickadees seemed helpless, and when a return was made to the nest the young were all dead and one was half-carried away. There are very few birds that eat ants in this neighborhood and most of the birds, aside from the Woodpeckers, will ignore them as food. I have seen the Chipping Sparrow, as well as the imported, hopping all about among the ants on the sidewalk and lawn and not one was touched.

Occasionally a cock bird will rear a brood of young after the female is killed, and I presume that this occurs oftener than is generally believed. It is well known that the cock of the barnyard will sometimes take care of a brood of chickens, and I have seen a gobbler caring for a flock of young turkeys, and it is fair to suppose that the wild birds are equally or more at-

tached to their offspring. Two instances in which the female was removed and where the male undertook the care of the family have met my notice; one in the case of the Robin and once with the Song Sparrow. In no case have I found where the male has incubated and hatched the eggs alone and I doubt if this is ever the case. Generally if the nestlings are very young when the mother is removed, the male will leave the young to their fate, and it is only in these cases where the young are advanced in growth that the father attempts to carry them through. It is a common occurrence, I might say the rule, that the male takes almost the entire care of the young after they have been out of the nest for a week or more; that is the first brood. Almost as soon as the brood is out of the nest the pair make preparations for another brood, and with this in view another nest is quickly prepared, for the Robin and all other birds rarely rear two successive broods in the same nest. The mother bird does most of the work, and I have frequently seen the male taking entire care of the chirping brood while the mother was carrying materials for the second home. I have seen the male feeding and teaching the brood while the mother was looking on from her elevated perch, as she sat upon the eggs.

Many unobservant persons suppose that most birds rear two and three broods in a season, whereas I do not think that any species has been proven to be an annual raiser of three broods, while the birds that rear two broods are not as many as is credited. It may be that the familiar Robin occasionally rears three broods, though I have never seen it proven, nor have I seen it proven that any species of birds of the Great Lake region raises three broods. The imported sparrow may sometimes rear three broods, and it is credited with four or five broods, but I do not think

it likely. It is fair to think that if a pair of birds builds its nest and hatches two broods and brings them to maturity it has enough to do. Many of the obiquitous sparrows are robbed two or four times, as they are persistent nesters they continue to build and lay; but if they are not disturbed they will rear but two broods.

From years of observations the following conclusions have been drawn: Hawks and owls rear but one brood in a season, but if disturbed in their nesting arrangements they will make repeated attempts, and I have known of hawks building three nests and laying three sets of eggs in one season. This was in the case of a red-tailed hawk. Cooper's hawk has been known to build three nests also. Red-shouldered, marsh and sparrow hawks, and great-horned screech and barred owls will also lay two sets of eggs, if the first attempt at nesting is broken up. I have known of a pair of spotted sandpipers building three nests and laying three sets of eggs, the last of only three eggs. Robins will always attempt to rear two broods if undisturbed, and brown thrashers and catbirds will often raise two broods, but not always. Robins begin nesting two weeks on the average before the other thrushes. Bluebirds generally lay two sets of eggs, and if disturbed will continue the attempt. Barn and eave swallows, and the common phoebe rear two broods if undisturbed; the latter species being the only bird that I have found to lay four sets of eggs in a season. A pair of these birds built three nest and deposited four sets of eggs, in numbers, 5, 5, 5, 4. This instance is an excellent example of the bird's pertinacity in attempting to succeed when disturbed. I do not think that any of the warblers or vireos are given to rearing two broods in a season. A fair rule to go by is this: That if a bird lays its eggs as late as the middle of May the species is not apt to

attempt to rear two broods; whereas the birds that lay two sets of eggs habitually, as the robin and bluebird, usually begin nesting by the first of May. Nevertheless the late nesters are equally persistent, as for instance the goldfinch, which is often disturbed in its first and second attempts at nesting in July and August, and is therefore not rarely found nesting in September. Strictly speaking, there is not a month in the year when eggs cannot be found in the nests of our birds in the Great Lake region, and I know of eggs in nests in every month of the year excepting December. The great-horned owl lays its eggs in February, and occasionally in January, while I know of a set of eggs of the bob-white being secured in the middle of November. The quail is a very peculiar bird in its odd choice of time for egg laying, and has been found laying at all times of the year, it is said, and the female has been found frozen stiff on the nest in the middle of winter. When we consider that this species lays from twelve to twenty eggs at a clutch, and then the length of time to hatch the eggs and the time to bring the young to an age to care for themselves, it appears ridiculous to claim that the quail rears two broods in a season. It is quite likely that the late nests of the autumn are the result of previous disturbances in the nesting arrangements of these birds which have the persistence of the other birds, and strong desires to bring forth a brood.

(To be Continued.)

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Bulletin of the Cooper Ornithological Club.
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The Nidologist. Vol. I Nos. 1, 2 (Sept.-Oct. '93) and 6 (Feb. '94).

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The Iowa Ornithologist. Vol. II Nos. 2 and 4 ('96); Vol. III Nos. 2 and 3 ('97).

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The Journal of the Wilson Ornithological Chapter of the Agassiz Association. Vol. I No. 2 ('93).

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ALBION, N. Y., OCTOBER, 1902.

WHOLE NO. 193

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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ENTERED AT THE P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

An Illinois Heronry.

Five miles to the south of our village the head of a former immense belt of timber begins and in an unbroken line of small groves and larger patches of

wood follows the course of the Embarras river many miles to the southward.

While the grandeur of its primeval days is but a memory, many lofty old sentinels are yet standing—pathetically stretching out their mighty arms in appeal for the return of the good old forest days.

What remains is known as clearings but nestling here and there in the bottom-lands and bends of the creek we still may discover a tangled copse or a willow thicket where we may find just enough of the color and loveliness of the garb of mother nature to remind us of her past glories. These are attractive places for many species of our woodland fauna and we are often surprised and pleased with new ornithological discoveries brought to light from the depths of their recesses.

For several seasons previous to 1901, our suspicions of the presence of a colony of Black-crowned Night Herons (*Nycticorax nycticorax naevius*.) were based entirely upon a series of large nests (of their age we could only conjecture,) overloading a number of willow trees in one of these bottoms. Several of these willow trees supported as many as three of these huge basket affairs upon their branches. In addition, each year, reports reach our ears of the breeding of a colony of big white birds in Bowses' Grove. These were locally distinguished by the name of "squawks" and each season we tramped many a weary and unsuccessful mile in search of the heronry. I might attribute our continued lack of success to the fact that our first discovery of nests was noted in willow trees. I fear in consequence, that much more atten-

tion was given to willows than otherwise would, had we been better acquainted with the habits and eccentricities of the Night Heron. And here may we mention (with apologies to the reader) a common error with most observers. Far too often do we record as facts (in memory if not in record,) results based upon a single observation. Our first impressions are generally the deepest of our convictions and we are loathe to admit even to ourselves the possibility of a mistaken idea.

But to return to the Night Heron. On the 2nd of June 1901, I was lazily wheeling along the timber road of Bowses' Grove, riding parallel to the creek which lay some distance below me, when a startled Night Heron arose from the bank and flew directly over my head. With a loud squawk he dropped into a small grove of second growth of hickory on my left and visions of Heron's nests filled with big, blue eggs passed before my eyes. Deciding that the trees in this grove were too small to be chosen for a heronry, I resolved to ride on to a large grove directly ahead.

Dismounting quickly I strapped on my climbers and was ready for business. I daresay some of my readers will wonder why I did not first find the heronry. This thought occurred to me shortly after, when I had found no signs of the heronry in any part of the timber. I can only explain my actions by confessing that I was probably just a little bit excited.

My disappointment caused me to turn back to the first grove where the actions of the Night Heron might be regarded as suspicious. Fifty yards tramping beyond the fence placed me suddenly and without warning in the midst of my long-looked-for heronry. I had stepped on a large twig and at the loud snap, a Night Heron flew down from a tree a few yards in advance. Instantly the air seemed full of

Hérons and as each one gave vent to a series of squawks in as many different keys, the noise was truly deafening.

About 30 feet up in the first tree I saw a large pile of sticks and in the next another, and so on as far as my eyes could reach. Each direction I turned I saw these large white birds hurriedly leaving their nests.

My former state of excitement was as nothing compared with my condition at this moment. Nests to the right of me—nests to the left of me—nests all around me—not quite "six hundred," but enough to satisfy any egg crank. Several minutes elapsed before I had sufficiently collected my wits to decide which nest to first investigate.

While yet on the ground I was "up a tree." A nervous, hurried climb brought me within reaching distance of my first nest. Debating the question as to whether the set would number three or four eggs, I felt into the nest. Each finger of my hand was promptly seized by a hungry, week-old Heron. Their strenuous endeavors to swallow these useful members would have proved alarming, had not nature snugly fastened them to my hand. Week-old Herons—almost a month too late for fresh sets of eggs. Oölogical stock went tumbling and my spirits fell to zero. There seemed to be no hope for better luck, for if one set had hatched, (I reasoned) all would be hatched.

Dejectedly I descended to the ground but remembering a storm of two weeks ago, I fell to theorizing. Would it be possible—I asked myself—for a severe wind storm to dislodge and destroy a few of these apparently flimsy structures? In such an event the owners would be obliged to rebuild and at this late date, second nests would probably contain fresh eggs.

With this theory as a stimulant I climbed twelve more trees, in each case to be rewarded with a vision of three or four gangling yellow-eyed young

Hérons. My fourteenth nest proved the accuracy of my theory and I descended with my first set of four Black-crowned Night Heron's eggs.

Covered from head to foot with white, chalky dust, my eyes and throat full of it, my hands and arms scratched and bleeding, I presented the picture of a thoroughly exhausted but happy Oölogist.

I climbed to no more nests, but from where I stood I counted 38 of these oddly constructed bird-homes, which number alone would form a good-sized colony. It would be interesting to know the exact number of nests in the colony, but at that time I was too tired to think of counting them.

Profiting by my experience of 1901, I returned to the heronry May 12th of this season (1902) and finding them quite as numerous, collected two more nice sets of four fresh eggs.

Realizing how soon this beautiful and interesting bird would be with us only in memory, I was sadly tempted to add more sets to my collection, but equally as determined not to be one of the chief causes of its disappearance, I contented myself with the spoils already gained and the memory of my pleasant experience among the Night Herons.

ISAAC E. HESS,
Philo, Ill.

And If So, Why?

I have read, in the July and August numbers of the OÖLOGIST, the article by Mr. Claire W. Wood, entitled "If So, Why? With an interest tempered only by an occasional doubt as to whether I really caught the authors true meaning.

Confessing this doubt thus at the outset, I shall ask Mr. Wood's pardon if any of the inferences drawn or questions propounded are based on erroneous suppositions. A little further statement seems essential to a knowledge of what position the author of "If

not, why so?" occupies on questions which to the nature-lover, must ever assume an aspect of increasing importance.

Since in the tale narrated under the title above referred to, an imaginary opera glass student (defined apparently, by Mr. Wood as all that ignominious class who study birds without killing them) sits in judgment on an imaginary ornithologist, and thereby the two classes are separated and arrayed of necessity as against each other, it becomes of interest to enquire what Mr. Wood's definition of an ornithologist is and what the radical short coming of the opera glass student that forever debars him from entering the mystic zone of advanced knowledge from the holy atmosphere of which the ornithologist sees him "just mushroom high" and "sinks a serene self-satisfied smile which gradually gives way to a sympathetic expression as he muses back into the past."

If the average ornithologist muses back into the past with sufficiently keen memory, he may recollect a greater or less number of bird-skins made and of eggs collected. Some of these may even get repose in the cabinets of today; some, perchance, he may recall, went to satisfy the craving for scientific investigation, along original lines, of the mouse, who, like the ornithologist, was too shrewd to be convinced could come by observation without dissection. Of the whole fruits of his collecting, what percentage will memory recall, to which can be accorded the determination a fact new to ornithological knowledge, or one which, new to the student himself, could not have been obtained by him from some less destructive source.

As he continues to muse on the past he may recall some such instances as one the writer has in mind when, while in Porto Rico he shot a *Vireo latimeri*, and going to pick it up, found one tiny

blue foot grasping the little beak in death agony. This bird was one of a lot collected for the National Museum, and all of justification that science can give to slaughter should have defended this killing, but while not in a position to pose as an opera glass student, the writer confesses to a lump in his throat, on the occasion of that sacrifice.

As the opera glass student still muses in the past, he may, if he has ever been childish enough to read the writings of opera glass students, recall some by such authors as Mrs. Miller, the comparison of which with writings of the shotgun students, would not show unfavorably for the ornithological knowledge of the opera glass adherent.

He might even recall an article appearing in the OÖLOGIST a few years ago, written, I believe, by one since deceased, Roy Fitch, on the house-keeping of the Spotted Sandpiper, as complete a paper, replete with little observed facts as any that I now recall, the result of patient, careful, accurate observation, of a pair of Sandpipers during the complete cycle of their nesting and incubation, by Mr. Fitch, with an opera glass.

Such might easily be the results of musing by the average ornithologist. Can Mr. Wood recall any like memories in his musings?

Though apparently Mr. Wood's charity is not sufficiently far reaching to extend its bounty to the opera glass student, some members of which class it would seem, have unjustly criticised his methods. Yet it is sufficiently generous as to cast itself about the shoulders of every ornithologist who studies with a shotgun, of the sportsmen, the pot-hunter, the plume-hunter, and the woman whose head-gear proclaims her tender heart and helps to make her look "like an angel," gathering them one and all into its protecting fold, in one heterogeneous mass, from which alone

the opera glass student stands for the rejected.

While some of this varied assemblage may feel profound gratitude to Mr. Wood for his unexpected defense, others may not see their way clear to doing so.

It has been my good fortune to make the acquaintance of a number of men who being active and prominent members of the American Ornithologists' Union, I have always supposed were ornithologists. I wonder if these would accept a defense that placed them in the same category with the assemblage above mentioned, on the common plea that they sought personal enjoyment. For instance, I wonder if Mr. Dutcher, whose earnest work on the bird protection committee of the A. O. U. has done so much to secure restraining laws for pot and plume hunters, would appreciate being thus associated?

While we concede with Mr. Wood that for a solution of these questions we must turn from the view point of sentiment to that of economics, while we admit the justice of his insistence is the right of each man to seek his pleasure how and where he will, we must not lose sight of one point that Mr. Wood seems to have overlooked, namely that when the pleasure seeking of one comes in clash with that of several the minority must give way to the majority, the weaker to the stronger. Thus when the bird desires the insect, the latter is promptly sacrificed, when the ornithologist desires the bird, the desire is gratified, and when the desire of the majority is to admire and study the living bird, whatever tends to excessive destruction in the methods of shotgun student, pot-hunter and plume-hunter must give way.

The writer is as far from defending the position of the extremist opera glass student as that of the extremist shotgun student, but it would seem that an

honest conscience should dictate to the individual, to what extent the end will justify the means in matter of ornithological collecting and I should like to know just where Mr. Wood stands on this proposition.

B. S. BOWDISH,

New York, Oct. 16, 1902.

My First "Killy Hawk."

It was some years ago, the second of April, a cold and windy day. While sitting in my father's office a laborer from a local cemetery entered with a wounded specimen of the American Sparrow Hawk (*Falco sparverius*) commonly known as the "Killy Hawk." The latter had been in a fight with a fellow of his own kind, I should judge, and had come out second best. His wing was hurt and his leg broken, besides being spattered all over with blood. If one neared him he would open his mouth in a most savage way, while his eyes would flash with anger. However I took him home and with the assistance of my brother, set to work to cure him. We put antiseptics on his wounds and bound his leg with shoemaker's wax and thread. (What would a surgeon like the late Dr. Coues think of this treatment) We then washed the blood off of his feathers and gave him a corner in the barn. But we soon found that he was not eating and feared he would die of starvation, so we held a consultation which decided that the only way to feed him was to shove food down his throat. This was successfully performed with the assistance of a match. Three times a day he was fed, the bill-of-fare consisted of two courses, beef steak and bread soaked in milk.

In about a week and a half he "felt like a new man," and one clear day I took him back to the place where he was captured. At first he stood on my finger and gazed upon the surroundings but when he realized that he was

free he flew into a nearby oak. Here he stayed but a minute and then flew eastward until out of sight.

All this was before I had acquired the cruel art of making bird-skins. As I once related the story to an old collector, he smiled as he said: "I am inclined to believe that were he to fall into your hands now he would be 'cured' with arsenic and 'stuffed' with cotton instead of meat."

Although I have seen many birds of this species since, watched them for hours, studied them during the breeding season while about their homes, I must say I took more pleasure with this bird than with any whose acquaintance I made later.

A. W. BLAIN, JR.

Detroit, Mich.

Odd Nesting.

In the fall of 1900 a friend of mine found a small nest by the road-side, blown from some near-by tree; picking the nest up he carried it home and placed it in a grapevine that was growing up the side of the house. With the return of spring with its warm sunny days, a pair of Chipping Sparrows arrived from the south, and finding this unoccupied nest, the mother bird at once commenced relining it. In due time it contained four eggs which were hatched, and the little birds grew, and were as happy as though they lived in a typical nest of *Spizella socialis*.

GUY H. BRIGGS,

Livermore, Maine.

Chimney Swift Trying to Incubate Cooked Eggs.

I have taken two sets of the Chimney Swift from our chimney, and all of the eggs were cooked hard.

Nest was placed ten or twelve feet from top. This chimney is used every day.

LISPENARD S. HORTON,

Poughkeepsie, N. Y.

Nesting Materials.*

The Flycatchers present wider variations in their nesting habits than do any other families of birds of my acquaintance, for some build in holes, making a nest of all kinds of rubbish, others nest high in trees, some building in crotches while others, as the Wood Pewee saddle the nest on a branch as do the Hummers. Then again we have Flycatchers which build of mud and rubbish and stick their nest to the side of a rafter, the interior of sheds or under bridges, as the common Pewee. The Acadian Flycatcher nests in the deepest woods, attaching its delicate, shallow nest to the ends of long branches, while the Traill's Flycatcher, a species of the same genus, nests in the marsh or along streams, where it selects alders or willows and other small trees or bushes for its home and young. This latter bird builds a nest much like the nest of the warbler, while that well-known species, the Kingbird, constructs a large and compact nest in a tree.

But the strangest of all the Flycatchers, the family of wide variation in nest construction, is the nest of the Great-crested Flycatcher. In truth, this bird offers the oddest contribution of all the specialists, for it almost invariably incorporates a snake's skin in the nest which it constructs in a hollow in a telegraph pole, fence rail or limb of a tree in the forest or orchard. All other Flycatchers in my neighborhood build their nests openly, unless we except the common Pewee, which has modified its habit through the influence of man; but the Great-crested differs from all others by selecting a hollow in which to rear its young. The chosen cavity is often very capacious, and the striving pair usually fill up the space with rubbish, after the manner of the Nut-

hatch and that pertinacious hustler, the European House Sparrow. Into the cavity is carried a great variety of material, including grass, twigs, string, leaves, and strangely enough, the cast-off skin of a snake is generally found. Occasionally the skin is absent, but more often there are two or more pieces, and I have seen five separate sections in one cavity: quite probably from one skin, but torn in removal. The water snake, garter snake and blue racer's sloughs are used as I have proven by identifying the masks, for if the head portion of the discarded skin is in the nest it is easy for one versed in snakes to tell the species. The longest section that has been found in a nest was one which was nearly three feet long, and it is not rare to find entire skins of the smaller snakes. These shed skins are very light and are no hindrance to the birds. Someone has suggested that the birds select these snake-holes for nesting, and that the skins are already there. This is not reasonable, for if it were true, then the nests of Wrens, Bluebirds and other hole-builders would contain them, and moreover there are skins selected of some snakes which never climb.

It will be difficult to tell on what this almost invariable rule depends, and why these specialists select snake skins to adorn their nests.

M. GIBBS, Kalamazoo, Mich.

The Nesting of Birds.

When we consider the dates of nesting birds and flowering plants we find that the limit is in favor of the birds, though it is not generally understood so. Let us see. The first species of flowers to appear in the spring, north of the 42d parallel is acknowledged by all observers to be the skunk cabbage, which blooms, as a rule, in early April, but not rarely in March, while the latest flower, to my finding is the witch hazel which sends forth its inconspicuous

*In 1900, (March, April and June) we published three papers on this subject by Dr. Gibbs and this, the concluding one has been delayed until the present time. The 1900 issues can be furnished at 5c each, or the 3 for 10c.

blossoms in October. Now among the early nesting birds we have at least ten species which are known to nest in March, and one, the Great-horned Owl, which lays its eggs in February as a rule, and occasionally in January. As a legitimate nester in the autumn we have the Goldfinch, which is not rarely found to lay its eggs in September.

Thus we find that the range of nesting birds is wider than the flowering time of our northern plants, though many will dispute this on first mention.

Nearly, or quite all birds return to the same location year after year. Many use the same nest seasonally, as the hawks and owls, and many of the woodpeckers, more particularly the Red-head and Flicker, while others, as the orioles frequently build a new nest in the same or adjoining tree. It is not unusual to see three nests of the Baltimore Oriole in an elm; one freshly built, of the year, and the others in various states of dilapidation as indicated by the time when built, I have seen five nests thus graded in a tree and it is not rare to see four. Robins are much given to returning to the same nest, and I have known instances where a pair has nested in the same tree for eight consecutive seasons. Some years the pair would lay the first set of eggs in another nest, but the second brood was sure to be laid in the old nest, which was repaired for the occasion. Robins, and all other species which rear two broods in a season, so far as I am able to learn, nearly always select another nest for the second brood; however if the nest is robbed of the eggs the female will not rarely lay a second time in the nest the same season, and this is more likely to be the case if the neighboring tree where the pair formally built has been removed. Few birds will select the nest that the first brood of the season was reared in for the second brood. Birds are very neat about their household arrangements,

and are constantly at work keeping everything in the best of shape. Still the birds know that a house becomes at times unsanitary, and the pair nearly always selects another site for a second brood.

The mother bird is much more constant in her attention to the home duties than is the male, as I have observed in a great many instances and in many species the mother bird feeds and cares for the brood entirely. The nearest approach to an equality in the care of the young is in the case of the Robin, as the male not only does his full share of the duties of incubating, but also attends to the duties of bringing food to the growing birds. The only time when he appears neglectful is when he pauses in the work to pipe a few notes; but then the patient mate is evidently pleased at this departure, and but strives the harder to feed her babies as her brave mate carols to her from a near-by limb.

In feeding the young different species follow widely varying methods. Most of the precocious birds, those which walk or swim when hatched, as the Grouse and Bob-white and the Ducks, take the young about as does the domestic hen, when the little fellows pick up the food after the manner of the door yard chicks. Some of the precocious birds as the Woodcock and sandpipers when very young are taken care of after the manner of the nestlings, but this is all changed in a few days. I have seen the Spotted Sandpiper feed its young much as the Robin and other Perchers feed their brood. Nearly all species which are not precocious feed their young by regurgitation when the nestlings are small. I am not positive, but I believe that all of the perchers are thus given to feeding the nestlings in their extreme youth. Among the larger birds, many feed in a similar manner, some, as the pigeons, following this method throughout the

growth of the young. The herons also regurgitate the food, as do the kingfishers, swifts, woodpeckers and others to my knowledge. I should not be surprised to learn that the hawks and owls fed the very young in this manner. It is well known that the hummers follow this method of feeding for a good long period: longer than with any other species excepting the pigeons.

Generally after two to five days of this early form of feeding, the insect eating birds begin to cut up the food that is brought to the nest. I have watched the robin disintegrate a worm before flying to its nest of young, and have then seen him stand on the edge of the nest and hand out the bits piecemeal to the little gaping mouths. When the young birds are small it takes a much longer time to feed the brood than it does when the birds are larger. I have seen a robin spend all of five minutes in portioning out the supplies, and a chimney swift not rarely takes all of twelve minutes to feed her five young. But when the robins are nearly full size and about to leave the nest, the time for feeding is short and often. It is not rare to see an old bird fly to the nest, hand out one or two big chunks and away inside of twenty seconds.

The smaller birds do not litter the nest with provender in any case that I can find, but the larger birds are more given to this habit of provision. I have found nests of young hawks and owls brimming over with captured prey, which the old birds had provided in advance for the growing fledgling. In a Great-horned Owl's nest it is not unusual to find a wild rabbit, or hare as some call it; also remains of the grouse and other birds. In the nests of the buzzard hawks it is not unusual to find remains of small snakes, while about the nests marsh-hawks we can see gophers and small rodents. The butcherbird, White-rumped Shrike is given to hanging its prey about the nest, but this habit is

not as extensive as is generally written of, and many cases of nesting of the shrike occur without this habit being observed.

MORRIS GIBBS.

Field Notes From Manitoba.

The season of 1902 that has just passed, proved to be a poor season for field collecting. The heavy rains of the spring made the more secluded parts of my collecting grounds inaccessible. While the draining of the big Boyne Marsh is driving the water birds and consequently those birds that prey on them from the district.

Owing to the floods the resort of the Loon was inaccessible and I have no further notes on these birds from this season. But can record the finding of the nest of the Maryland Yellow-throat to me a new species. While driving through the long grass and heavy weed growth which abounds at Elm-point, I flushed a small bird from her nest; a quick stop was made and after a careful search on both sides of the buggy without success, I hunted through the grass beneath the rig and there found the nest very carefully concealed among the herbage and close to the ground, neatly made of bent stalks and dead grass, lined with a little horse hair and laying in the cup which was deep enough to make them safe, were five pretty pinkish white eggs speckled with reddish brown and black. These birds are fairly numerous here, but this is the only nest I have ever found.

CHRIS P. FORGE,
Carman, Man.

Late Nesting.

On the 20th of August, a friend brought me a set of 5 Sora Rails taken on the 15th. The nest was found while mowing grass, and the eggs proved to be almost fresh.

CHRIS P. FORGE,
Carman, Man.

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A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XIX. NO. 11. ALBION, N. Y., NOVEMBER, 1903. WHOLE No. 194

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THE OÖLOGIST.

VOL. XIX. NO. 11. ALBION, N. Y., NOVEMBER, 1902. WHOLE NO. 194

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
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The Virginia Rail.

To the frequenter of upland fields and meadows, a visit to some swamp or marsh is quite a treat, for birds of an

entirely different mode of life are met with, often in great abundance, and an entirely new scene presents itself to the expectant ornithologist. Then, also, there is only one season of the year when such a locality is devoid of interest, and that is in the dead of winter. During the other three seasons, such a place teems with bird life, and many interesting phases present themselves.

On the 8th of last May, while searching for nests on a small neck in Cedar Lake, I found the nest of a Virginia Rail, (*Rallus virginianus*) which contained nine eggs

The nest was built upon a clump of earth, and was entirely surrounded by water and cat-tail rushes.

The female was on the nest when discovered, and was apparently as surprised to see me as I was to see her, although she probably had heard me coming through the rushes, for I made noise enough. She remained upon the nest, however, until I approached near enough to touch her with a stick which I carried, and then slipped quietly off and disappeared among the rushes.

The eggs were in various stages of incubation, as setting begins as soon as the first egg is deposited, and the first ones laid are usually nest stained a peculiar yellow from the decaying vegetation in the nest.

Their ground color was cream, the markings of brown, umber lavender and purple, distributed over the surface of the eggs, some of them having the tendency to form a wreath around the larger end.

A set found in 1899 was very heavily marked with chestnut and red-brown, which so nearly covered the large ends

that the ground color could hardly be seen.

Eggs of this Rail vary greatly in shape, size, color and marking. The set found this year averages .94 inches minor axis, by 1.25 inches, major axis.

I did not think this nest contained a full complement, as I have never found a set of less than ten eggs in the large number of sets that I have found in the past few years, although sets of less than this number are often found.

I did not see the female again after she had been so rudely forced from the nest, but I could hear her *ki-ki-ki*, occasionally, as she splashed around in the water, while I was taking the dimensions of the nest and eggs and securing a photograph of the same.

These Rails arrive in large numbers during the month of April, and a few weeks later nest building begins.

Their food at this time of the year consists of worms, slugs, tadpoles, insects and leaves and seeds of water plants which they seek among the reeds and rushes along the edge of the lake. They are generally quite retiring during the heated part of the day, but in the early morning, and after the sun begins to dip toward the west in late afternoon, they are busily engaged in searching for food, and their cries and calls are heard on all sides. I have often amused myself when returning home late in the day, by throwing stones into the lake near some point where the cat-tail rushes grew quite abundant near the edge; and then listening to the grand chorus of voices that my effort had brought forth.

When surprised they will either run out of sight in the rushes, or fly a few yards and drop to the ground again. They are, to all appearances, very poor fliers, and can be easily killed while on the wing.

They generally rise to a certain height when startled, seldom more than six or eight feet, and shoot straight ahead

toward a certain point, fly in a bee-line until they reach it, and then drop out of sight.

The flight is awkward and slow, with the legs hanging down, and for a short distance only, except during migration. They are very good swimmers and divers, however, and very rapid runners.

The young take to the water as soon as hatched, where they are as perfectly at home as young ducks. They swim surprisingly well, and follow the parents in search of food until they are able to care for themselves.

When a female with young is taken by surprise, there is a great commotion and hub-bub. The young swim rapidly off, or hide in the grass, while the faithful mother scurries hither and thither in nervous excitement and alarm. If you remain motionless for a few minutes, she will summon her little ones to her side with a curious soft note, and they will go to feeding again as if nothing had happened to disturb them.

In the spring of '01, while hunting for nests of the Yellow-headed Blackbird and the Song Sparrow near Cedar Lake, I found an uncompleted nest of this rail in a shallow pool in the center of a bed of cat-tail rushes, and had just made up my mind to secure that set, but about the middle of May, when I again visited the place I found the remains of six eggs in the nest—broken shells and shattered hopes.

What had done the mischief I never knew, but I had my suspicions; a pair of Bronzed Grackles had a nest not far off, and a pair of noisy Blue Jays were making themselves quite conspicuous by their loud clamoring.

That wasn't the first and only time that my good nature has been tampered with by these egg eaters, and when I am imposed upon in such a manner as above described, I am willing to fight.

GLEN M. HATHORN,
Cedar Rapids, Ia.

A Word of Criticism.

The size and *amount* of contents of ornithological, as of other journals is determined by the financial resources, which in most cases is largely determined, in turn by advertising patronage. Therefor, though the readers are supplied with unsatiable appetites they are less directly responsible for this phase of their journal.

The *quality* of the contents however, is a matter determined by the ability and generosity of the readers as well as the selective judgment of the editor, so if the quality of contents of a volume of a periodical for which we subscribe and contribute (or should contribute, if capable) we should remember we are jointly responsible for the disappointment. To this not only carefully selected and prepared contributions, but also suggestions and criticisms also may tend to materially improve a periodical without in the least increasing its cost.

A comparison of the current OÖLOGIST with some of those of past years, would certainly disappoint the thoughtful reader, it is not alone in reduced size which we must remember is often a financial necessity, but in the quality of the contributions. In other ornithological literature as well as in the periodicals there has of late been an unfortunate tendency to "re-hash."

If one has a good descriptive work by Brown covering the whole field, how much is he profited when Smith in turn gets out another which gives him a repetition of the identical information contained in Brown's? If ornithological books or government publications present us with information on a certain phase of the study in question, are we likely to be interested in a re-hash by some periodical which really adds not one item of *original information*? And this last brings us to the real point of the whole thing. If I wrote an article accurately describing the Red-

shouldered Hawk, its nest and eggs, and it is published in one of the ornithological magazines, few are interested, not merely because the bird is very common but because the readers can every one turn to his Coues' Key, Ridgway's Manuel or any one of the admirable complete treatises, and if he happens unfamiliar with the bird in question, find what is wanted, in other words I have not given one word of *original information*. If I compile a local list of birds and enter descriptions, range, etc., I have wasted my readers time just so far as it has been taken up by that material which could be found in any descriptive treatise, by information which was not original. In the individual case of the OÖLOGIST too many such old time contributors as the Rev. P. B. Peabody, Prof. P. M. Silloway, and Mr. H. C. Lillie have lapsed into silence; called away doubtless by more pressing duties, while still faithful contributors have on their part lapsed into the habit of contributing such matter as requires least trouble for preparation, the least amount of patient *original* investigation to get at the knowledge involved.

Out here in the Cuban wilds, I can not refer to the particular issue, but well do I remember an article published in the OÖLOGIST a few years ago on the nesting of a pair of Spotted Sandpipers by Roy G. Fitch, since deceased. I do not believe that one who read that article but what was deeply impressed by its extraordinary value, and yet it was of the nidification of a common bird. The secret was its *original information*. Facts therein given I do not suppose could be found in any ornithological work extant.

Descriptions of traits of habit not commonly recorded in the books, of newly heard peculiar notes and songs, unusual occurrences of species, of "rare takes" in relation to species not commonly well known, and particular of

careful records of detail regarding common species as well as rare, would seem to me to offer a field for contributors, but little entered and of surpassing interest and value.

Can't we have a waking up, an ornithological revival, and can't we see the OÖLOGIST once more rival its most balmy days, in interest of contents if not in size?

I believe there are many of the present readers who remember the OÖLOGIST as one of the main inspirations of their early efforts toward scientific research, and in their hearts regard it with a fondness which will never attach to more pretentious publications. It may necessitate some trouble and perhaps the turning of some "midnight oil" on the part of some of us who are pretty busy with other matters, but let's have a regular stampede of original, valuable contributions, criticisms, and suggestions, and I'll warrant the surprise party will be welcome to our friend, the M. D.

B. S. BOWDISH,
Guana, Cuba.

Nest of the Bald Eagle.

On the 19th of December Louis came in and said he had flushed an eagle from the nest we had been watching for several weeks.

A few days later we took our climbers, egg box, etc., and started for the nest which was in a pine tree in the open woods, about a mile inland from the ocean. When we were within about 200 yards from the tree the old bird flew off and began circling above our heads uttering shrill cries. As we approached the tree she showed quite a desire to "do things" to us, but a load of shot soon made her think that it was unhealthy to come too close and she flew higher up.

The nest was a bulky structure which could easily be seen a mile away with the naked eye. A hard climb of 58 feet found me beneath it, with the rather

difficult job of tearing away the north side before I could get into it. This occupied nearly half an hour, the eagle in the mean time kept circling above my head making a great fuss, but did not offer to attack me. When I finally got into the nest I felt well repaid for my trouble as I carefully packed in the egg box the one white egg on which incubation had just begun.

The nest was evidently several years old and was solidly built of pine sticks, burrs, needles and grass roots, with some palmetto bark and water hyacinths, an aquatic plant that is cast on the beach in great numbers. The center was inside with dirt and rubbish, while the outer edge was all pine sticks which seemed loosely piled together, but was nevertheless solid enough so that I stood on it without fear of its giving way.

The outside of the nest was six feet across and five feet deep. The top was flat except for the rim of sticks around the outer edge, which was raised about a foot higher than the rest of the nest, thus preventing a person or the ground from seeing the bird while sitting. The depression for the egg was 1½ feet across and five inches deep. The only lining was a trashy lot of bits of hyacinths and broken reeds. Quite a number of bird feathers, fish bones and rabbit fur were found by digging into the nest a little way, evidently having been covered up as the nest was repaired year after year.

The old birds hung around their despoiled home for several days afterward and then disappeared, but we hope to see them again next winter when the breeding season rolls around.

E. L. WARNER,
Pablo Beach, Fla.

The Grasshopper Sparrow.

After I became familiar with the habits of the Grasshopper Sparrow I devoted a great deal of time in the breed-

ing season for the past few years in finding their nests and eggs. In 1899 I found a nest with young, July 9th, after watching the female bird until she returned to the nest. The nest was in an open pasture field near woods and was sunken in the ground, but was arched.

In 1900 I watched the birds again but they always seemed to know what I was after and sat perched on some weed and uttered their familiar notes that resembles the grasshopper. I watched one pair in the latter part of May and at last found their nest with five young. The nest was as usual sunken in the ground and just a little arched over.

In 1901 I failed to find a nest, although I searched diligently every time I went out.

This year I had the luck to find a fine set of five nearly fresh eggs. I call it luck because I had hunted for them so long without any success and on May 30th while walking home after a day's hunt, and right close to the place where numerous boys were playing ball, I kicked up a Grasshopper Sparrow. I stopped short and watched the bird run along the ground trying to persuade me on but I was up to her tricks and when I looked near my feet I saw five pretty speckled eggs that I had been looking for so many years. I found another nest with young, and received from a boy 2-3 a short time after.

E. J. DABLINGTON,
Wilmington, Dela.

My First Oven Bird's Nest.

No doubt every Oölogist has been aggravated in his bird-nesting experiences, by the ill-luck which seems to constantly follow one, in his efforts to add to his cabinet, a set of some quite common, but continually elusive species. For a number of seasons I had been hoping to find the nest and eggs of this deep woods-loving, golden-crowned songster.

While the Oven-bird is not by any means the rarest form of our resident warblers, all my previous efforts at locating his home had been in vain. I think my readers will generally admit that a well-formed desire, constantly denied, finally develops into a mania. At any rate that was about my state of mind when I headed for the woods on a fine morning in June, 1901. Determined to find Mrs. "*Aurocapillus*" at home if possible, I tramped back and forth through every likely looking spot in each corner of the woods that rang with her lord's "Teacher, teacher, teacher" song. Suddenly from near my feet fluttered a little Ovenbird which ran a few feet and then endeavored to draw me away with the broken-wing argument.

Stooping, I lifted the cover of a leafy mound and there before my eyes, snugly tucked away, about four inches from the entrance, lay five, six, yes! *seven* beautiful, speckled—Cowbird's eggs.

ISAAC E. HESS,
Philo, Ills.

"Foiled."

On one of my rambles along Santa Rosa Creek last collecting season, or more accurate, May 18, 1902, I noticed a newly completed nest of Lazuli Bunting. It was a fine piece of architecture made of coarsely woven blades of dry grasses, lined with horse hair, and on finding it without eggs thought that by next week I would be able to gather a fine set with the nest. As per schedule I made the place my promised visit but on examination found only two eggs, so left them to get a complete set. What was my surprise on going again the following week to find one egg hatched and the other nearly so, and the female Gazuli singing "Foiled again."

H. F. DUPLEY,
Santa Rosa, Cal.

Migration of Birds.

Since the earliest times the subject of migration and seasonal movements of birds has occupied the attention of naturalists, and men wrote upon this subject over a thousand years ago. And yet after all this time there are many points which are still to be touched upon and several others still in dispute. Naturally there were strange stories regarding the misunderstood disappearance of the birds in earlier times and some of these superstitions are still in vogue among the ignorant. There are writers who still claim that Swallows burrow in the mud in the winter months. Many observers of worth have evaded this subject in the past while some naturalists over a century ago scouted the idea that our beautiful Swallows could hibernate in the ooze and slime of the pond and bog. In the main, observers are now agreed that food requirements are the principal causes of the seasonal movements of our birds, and not as is asserted by some writers, the results of heat and cold.

Gilbert White of Selborne speaks of the seasonal movements of the birds at his point of observation in the lower part of England as not so much dependent upon heat and cold as upon conditions of food supply. This worthy man and close observer wrote nearly one hundred and fifty years ago, yet his good sense and charming style in writing have secured him the enviable reputation of a classical writer in the branches which he wrote upon.

This truth regarding the food supply having greater influence upon a species of bird than the cold, was nicely illustrated in the case of an escaped Cardinal Grosbeak, which lived far to the north of its usual winter quarters and farther north than it is usually taken in summer. This escaped bird though reared in confinement, and we might say ignorant of migrating habit, proved

that it was able to thrive throughout the colder months in the rigorous weather in Michigan. This ability to withstand the severity of the season because it lived near to the houses of its friends where it was provided with a liberal supply of food.

Many other Michigan birds that seasonally leave us for the south, could withstand the severity of the season if provided with the proper food in their winter quarters. The Robin, Meadowlark, Mourning Dove and more than a score of other well known species are occasionally or quite one-third of the seasons found with us throughout the winter month or a portion of these months; but this variation is not constant at the north and indicates that the requirements for food were met for that season. These variable birds may be classed as half hardy in making out the list of our winter birds. There are thirty-four species of these half-hardy birds that our found with us an occasional entire winter, or portions of the winter almost every season.

The well known Robin which is also called the Migratory Thrush, is said to frequently visit Central America in its southern wanderings, and I have seen them in the southern part of Florida in February. But it is reasonable to think that these extreme southern limits are not taken by the most northern representatives of summer in this land. I believe that as a rule these extreme southern wanderers are the summer birds of Kentucky and Tennessee, and birds of those latitudes; the general run of Michigan birds probably not going further south than the thirty-sixth parallel, while the Robins, which dwell with us in the southern part of the Great Lake Region are representatives or summer residents of sections three or four hundred miles to the north. Therefore, we may reason that the Robins, Meadowlarks and others,—as the little Song Sparrows are not really

residents but rather winter visitors from the north. Reasoning in this way we may claim, not without cause, that Robins, Meadowlarks and others that are but occasionally found with us in winter are not really ever residents in any section at the north.

This uncertainty as to whether we are to call a species a resident or winter resident applies to a great many of our birds, as for instance, the Black-capped Chickadee, Nuthatches and Winter Woodpeckers and others. I am fairly satisfied that we have no actual residents among the birds in any one county, with the exception of two or three Owls and a very few other birds; ten at most, probably less, although there are embraced sixteen species of permanent residents in Michigan. If I were to make out a list of the actual permanent residents of Kalamazoo county, there would be embraced the following few birds—Ruffed Grouse, Quail, Turkey (if still found), Great-horned Owl and Blue Jay and no more, and I am not at all sure that these few do not occasionally migrate outside of the bounds of the county that they generally inhabit.

Change is a constant factor in the whole universe, and it is only because of our comprehension of changes made by the creatures about us that we are continually reminded of the deviation—gradual or otherwise which is taking place. The principles of evolution need not be considered, but it remains a fact that any deviation from a standard, either as concerns food or the movements of a species must result in change, greater or lesser, and we may appreciate this in many ways.

Migration is generally a seasonal feature with most of our birds and it is also a well known occasional move with the mammals; and even reptiles and insects are subject to it; not perhaps as a seasonal impulse but as a result of food requirements. No matter

how short a distance is traveled by an animal, whether it is a seasonal move for the purpose of hibernation or to change location on account of the scarcity of food, it is a migration.

Many turtles of our lakes and streams migrate spring and fall, though it is not generally known. I had an excellent opportunity to observe this movement one season. Two ponds connected by a small stream were inhabited by turtles of three kinds and at times there was an exodus from one to the other of these lily pad pools. In following the course of the connecting stream the turtles fell into a large vat which was used to wash sheep in. I have seen this vat filled with a seething mass of turtles which could not escape until the water rose by autumn rains in the upper pond. There was a great number of snapping turtles, some of which weighed as much as twenty pounds, as well as a number of little water terrapins, all of which had come to grief from their love of migrating.

Twice it has been my privilege to observe a wholesale delivery from small ponds which were being drained and in which the little water terrapins could no longer find an agreeable lodgement. The little painted terrapins immediately took to the road, so-to-speak, and piked for the nearest water hole. Once a migrating box tortoise came walking through our yard in the center of the city and I do not think that a greater surprise was ever offered me in the way of unexpected city invasion. Many unexpected wanderers have been observed and sometimes entertained, but none, not excepting the striped snake, porcupine and raccoon, all of which reached the center of our city, have caused so profound a sensation as this lone chelonian. The box tortoise, commonly called turtle, was entertained and we kept him three years and watched the seasonal hibernation.

Snakes migrate; but this is always from necessity and is rarely if ever a seasonal feature with them as with the frogs and toads. This is the case in my neighborhood, though we might say that the vernal love making and song chorus by the tree frogs as well as the common garden toads which visit the pools each spring is a migration. Insects are well known migrants; often apparently without aim as in the movements of a flock of the big brown monarch butterfly which always moves with the breeze. But again we have the destructive visitations of the dreaded army worm and other destructive caterpillars which enter and destroy whole orchards and groves.

Among mammals there are many well known instances of migratory movements and these when studied are invariably found to be the direct results of the food requirements of the animals. Many instances of the movements of immense numbers of squirrels are recorded. Over seventy years ago in New York state my father saw an instance of this nature. The squirrels were so numerous that they were all over the section and were captured by the simplest devices. Then they passed on and were not seen again in numbers for years.

There is an interesting point in the fact that bats do not migrate to any extent, so far as may be learned from our present knowledge.

The only mammal gifted—now with flight,
Yet strangely ever living in one place.

This is the more remarkable when we know that they could fly to warmer quarters in the autumn and thus avoid the period of hibernation. Though so well provided with the means of transportation they are the most thoroughly devoted to one neighborhood of all our mammals and it is fair to say that the reptiles of the north have a wider range in the warmer months than do the bats of a neighborhood. The little brown

bat rarely flies over a course greater than two hundred yards in extent in the capture of its prey in an evening's flight. Yet is safe to say that bats do migrate at times and under certain conditions.

It is considered remarkable that the delicate Warblers, Vireos, Kinglets, Swallows and others should arrive in the spring so nearly on their appointments, but this does not appear nearly as surprising to me as does the appearance of the delicate Chickadee, Pine Siskin, Creeper and other small species in winter; mites of flesh which gambel about the evergreens in the villages and the bare trunks of the trees in the most severe cold weather, and evidently in perfect enjoyment.

It is reasonable to conclude that migration occurs each year among the more northern species that visit us occasionally in the winter, as the Bohemian Waxwing, Pine and Evening Grosbeaks, Crossbills and others, and the fact that we do not always meet with them is not proof that they are not to be found somewhere within our latitudes; they are probably straggling in some other quarter. It is a fact that there is no point in Michigan where we may expect to find these northern birds each year and some of them are only to be seen at very rare intervals.

TO BE CONTINUED.

A Large Set.

On May 2, 1902 I found a Flicker's nest in an old apple tree on my lawn. The hole was a deep one and at the time there were five eggs in it. I took out three and left the others for nest eggs. In four days I cal ed around and again there were five eggs. This time I only took two eggs. I kept on taking eggs in this way until I had twenty-three. Then I let the poor Flicker have a rest and a chance to hatch out some.

T. B. PARKER,
Newtonville, Mass.

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OÖLOGY, ORNITHOLOGY AND
TAXIDERM Y.

FRANK H. LATTIN, Editor and Publisher,
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Migration of Birds.

Of the the winter birds of the Great Lake Region there are about ninety species, and in Kalamazoo County, be-

tween the forty second and forty third parallels there are over eighty recorded as winter residents or in the division called half-hardy, those that remain an occasional winter or a portion of the colder months.

Of these winter residents that come from the north there are none more rare in appearance than the Bohemian Waxwing and Pine Grosbeak. It may yet be proven that the Pine Grosbeak is an annual visitant, but this has not as yet been shown though they have been recorded successive seasons. Let us look at the records of appearance of this bird of the extreme north. In 1869 it appeared in Kent County; in 1870 in Cass and Calhoun Counties; 1871 found the birds in Vanburen County. The winters of 1872 and 1873 gave no win'er records that I can find. In January 1874 the species appeared in Kalamazoo County, in small flocks, and in December, 1874, they again visited us and in large flocks, remaining until February, 1875. Flocks were also observed in other parts of the state in the winters of 1874 and 1875. They were seen in 1878 and 1879 in Kent County.

Now if cold weather was the cause of the appearance of these birds I wish to learn why they have not appeared in the state in other seasons, and in equally cold or colder seasons? The winter of 1892 and 1893 was very severe with deep snows, but no Pine Grosbeaks came to the Great Lake Region, though they were abundant that season in Massachusetts, as recorded by reliable observers. It is fair to say that with the northern species that visit us there is a cause for these migrations which has not yet been understood and which is

not only aside from the severity of the weather, but also aside from the generally accepted one of the scarcity of food. And this leads us to ask if there may not be other existing causes for these irregular migratory movements, whether in birds, mammals or insects? It seems to me that there are probable reasons for these irregularities in migration and we are incapable of understanding them as we are unable to comprehend the thousand and one features of the great economy; and yet we always speculate upon these problems in a manner to correspond to our ideas of the requirements of the birds and other creatures of the neighborhood; forgetting that there are life secrets among our feathered friends which we are as yet not able to penetrate.

If unmolested birds will return to a locality and if they do not it is from the direct influence of civilization, a subject intimately connected with migration as to its extension and limitation. The appearance of new species of birds in almost any quarters at the present time may be considered as a result of the effects of civilization, at least I have found that this is generally so in my neighborhood. A great many species have extended their range, or as we know many have been curtailed in their selective haunts while some have been nearly or quite exterminated; birds and mammals too, which were once abundant. The subject of the effects of civilization upon our birds will be considered in another chapter. It is only in localities where we find the so-called advanced improvements of the day where we have it proven to us that the birds are markedly less in numbers. In cities and highly developed agricultural sections the birds are sadly lessened, while in settlements and new lands it is found that for a certain time the number of birds increases, and species previously unknown to those quarters are found to become abundant.

In migratory movements nearly all species of birds are very deliberate, and there is not any evidence of rush in either vernal or autumnal journeys. Though the ducks and many species of shore birds fly so rapidly, still they do not perform any long continued trips, and they loiter on the way, spending much time upon selected feeding grounds. This same deliberation is observable in all families of birds that pass through sections that I have visited. There is more haste displayed in the latter spring migrants which we might say were late in getting to their nesting grounds, but I have seen no evidence that any of the species are in a hurry in making their southern trip.

Neither are birds, as a rule, in a hurry to make the vernal trip. I have seen thousands of ducks, more particularly the Lesser Bluebill, in Southern Florida, in early April, and as all observers know these birds are usually abundant in Michigan by March twentieth. This accounts for the continued presence of some species during migration, many passing through while many others have not even left their winter quarters. This slow method of migrating makes it agreeable for the hunters among ducks, for if the birds came with a rush then the shooting would be over in a short season. Of all the birds to appear in a grand rush in migration, the Wild or Passenger Pigeons were the most pronounced. A pair or two would at first be seen coming from the south, and then within a day or two at farthest a small flock, quickly followed by larger flocks and then the mighty hoards poured in for two or three days. The woods were full of them and for a limited time it fairly rained pigeons as the hunters fired right and left. Then the flocks disappeared and soon there were no more pigeons, excepting a few scattered nesters until the return of the autumnal flocks which remained longer than in the spring and were replaced

by other pigeons for a month or more. This annual rush generally occurred from February 25th to April 3rd in my experience; but while there was generally one grand incoming wave, there were seasons when there were pigeons at an early date, perhaps in early March or even late February which lasted for a few days or even a fortnight; then all disappeared and suddenly there appeared another flight after an interval of from one to three weeks. This variation was observed several times and conclusively shows that the vast flocks came from widely removed quarters.

Among the birds that I have carefully observed as to arrival for a great many years, is the Chimney Swift. It is often said that one swallow does not make a spring, and it is a sensible saying; for I have repeatedly known of the Blue-back Swallows being driven south again by a severe snow storm in late March or early April and skating and sleighing to follow. But I feel safe in saying that the appearance of the Swift fairly proves that spring has come to stay. Not settled weather to be sure for we rarely get that before the first of June, and sometimes not at that date in Michigan; but, as a rule, when the Swifts come we may expect the big rush of southern birds and the consequent rush of appearance of insect and plant life.

In my trips to Florida one of my principal pleasures is in taking notes on the birds and other creatures and my return to my northern home is somewhat governed by the movements of the migrating birds. It is the intention to not get within the boundaries of Michigan until the last snow flurry has disappeared and the rush of warblers has begun. One season, 1894, I noted the first Chimney Swift at Palm Beach, Lake Worth, Florida, on March 21st. This locality lies between parallels 26 and 27. Passing north I again saw the Swift at Micco on the Indian river,

approximately 28 degrees north latitude—March 29th. Then my route was varied and at Sanford, Orange County, and Kissimmee, Osceola County in the interior I found the birds in abundance on April seventh. Common at Tampa on the eight; this on the west coast. On the twelfth the birds were evidently nest building. Abundant at Cedar Key, Florida, on the 16th and also at Jacksonville on the 18th. On the 19th Swifts were found at Savannah, Georgia. A few were noted at Chattanooga, Tennessee, on the 20th of April, and the following day they were noted in Kentucky. There I found the American red-bud, *Cercis canadensis*, in bloom, a tree which generally blooms about May fifth to tenth in Southern Michigan. At Cincinnati the Swifts were abundant and also at Wilmington, a small place north east of Cincinnati. On the 22nd of April the weather was uncomfortably cold at least it seemed so to me who had passed several months in sub tropical resorts, and it was reported that a contingent of Coxey's army that camped out on the fair ground at Wilmington, Ohio suffered from the cold. On April 23rd the Swifts were found plentiful at Fort Wayne, Indiana.

Reached home, Kalamazoo, between the 42nd and 43rd parallels at noon, the 24th, 1894, and though a careful lookout was kept up for Swifts not one was to be seen. On the 25th a few were seen, and on the 26th they were plentiful. So it will be seen that I won in this slow race across our big country. This will show the deliberation of a well known bird in migration in spring. In the autumnal flight the birds are even slower in their movements as is illustrated in the Bobolink which loiters along and called reed bird and rice bird in different sections, finally, it is claimed, passing through Central America or farther. The ducks in their autumnal trips indicate the deliberation that birds

may adopt, and while they are hunted successively from the 45th parallel to the 27th where, or to the south of which they winter, this migration, including the first and last of the birds occupies all of three months, and this to cover less than twelve hundred miles as the crow flies

The Rails as a rule come with a rush, and though a few stragglers or advance guards appear in early April, or even in late March some seasons, the rush does not take place until late in April. I am well satisfied that the Rails and nearly if not quite all shore birds as well as ducks prefer the hours of darkness in which to make their long overland journeys. On some warm April morning we find the Virginia and Carolina Rails abundant in the marshes where there did not appear to be a bird the day before. From that day on these two birds make a great racket in getting settled in their quarters.

The smaller shore birds make phenomenal record as nesters when we consider the time they are at the extreme north. Many, as the Semipalmated and Least Sandpiper, Dunlin and Wilson's Phalarope, do not all leave us while slowly passing through to their summer quarters until June first, and reappear in early August about our small interior lakes. Many of these little sandpeeps cannot have beyond ten weeks in which to take their long journey to the extreme north, as is claimed and rear their young, and more remarkable still, moult also; and all in this time. It is probable that these birds moult at the north, and as their plumage is generally different from the spring coat it is reasonable to think that they do make the change. Still, some one has advanced the idea that these birds moult after reaching the south, which, while it seems unlikely, is almost allowable when we consider the marvelous time that these shore birds make, in nesting and returning to us.

It is probable that those sandpipers which pass through Michigan by May tenth are the ones which nest first and return to us first, while those which loiter in the spring flight are the birds that come to us after September first.

MORRIS GIBBS.

If So, and If Not So; Why?

Doubtless there is room in every walk of life for the extremist. Either the man of extreme *ideas* or the man of extreme action. However, the man of extreme ideas generally becomes decidedly obnoxious to those about him on account of *his ideas*, and the man of extreme *actions* generally gets into prison on account of *his actions*. It has been rightly stated however, that every extremist is of benefit to society in general, by reason of the fact that their *example is stimulating*, and that many endeavor to follow the precepts which they advance—and fail. In this failure, the matter of their own personal feelings is perhaps predominant and will not allow them to follow those teachings to the extreme point that the enthusiastic teacher has attained. Thus they occupy the position of greatest advantage, the middle one, or if you will, "on the fence," surely however, a position from which both sides of the matter can be viewed.

Doubtless the author of "Bird Killing as a Method in Ornithology" was actuated by the purest motives, but fell into that ever present error of the extremist, "there is no other side."

If on the other hand, the author of "If Not, Why So?" in the July and August numbers of the OÖLOGIST had not slipped inadvertently into the same pitfall, the interesting reply of Mr. Brudish might have been lost. Consequently the extremist has fulfilled a purpose in both cases.

To the true student of nature there must be no more painful thoughts than

those which dwell upon the death agony of some wild creature. On the other hand, the most keen enjoyment can certainly be found in the observation of natural objects with a field glass.

But he who states that one can "know the birds" as well with the glass alone as by the combined method of the present day working ornithologist, either is blessed with a pair of optics of the strength of oil emersion lenses, or must needs be satisfied with what others have written (and *this* was probably learned at the expense of bird life.)

The conscientious working physician to-day has literature piled high upon his shelves, regarding symptomatology, therapeutics, etc., but I warrant, that no one wishes to employ a doctor who has not *experienced* what his books and professors have taught him, and I doubt also if the doctor himself is satisfied to merely cram his mind full of the facts and teachings of others.

When we come to view the purely ornithological side of the argument, the fact that there *are* two ways of looking at it becomes plainly evident. It is also evident that both sides are in a measure correct, and productive of good. For instance it is not necessary to murderously slaughter half a flock of "red birds" to "positively identify" them, but I doubt greatly the ability of any of my numerous and well informed friends to distinguish between many of the species and sub-species,—for instance between *Dendroica palmarum*, and *D. p. hypochrysea*, by means of the field glass alone. But my friend will say, "We are not called upon to do this particularly for the habitat of the two is different, and the locality in which we observe the bird is enough to distinguish it."

Now let us suppose that "contrary to all expectation" one of these birds *is* observed in the habitat of the other. The field glass man observes it and

from its almost identical appearance, he makes no *particular* observation. On the other hand, our friend with the dangerous weapon thrashes through the underbrush, intent upon destroying life, the straggler falls and the list of the *avifauna* of the district is increased. Surely such things *have* happened. I quote at length from a somewhat caustic but altogether true criticism of uncertain identification, by that well known authority, Mr. William Brewster, Auk, Oct., '02, p. 420.

"It is with reluctance that we offer any criticism of labor which results in so much pleasure and profit as the editing of 'The Auk.' For some time however it has seemed to us that a stricter censorship of items for the 'General Notes' would result in a much more satisfactory standard in that department. Many interesting birds have lately been recorded *as seen, not shot*, by observers whose capacity for accurate observation is absolutely unknown to ornithologists in general. Some of these records seem to bear on their face, evidence of error. There appeared for instance in 'The Auk' for July, 1902, p. 297, a list of arrival in the Northern Adirondacks. The author lists the White-eyed Vireo, and records its arrival from April 25th to April 30th. There is no mention of the Solitary Vireo in the list. This seems enough to arouse suspicion. When one notes further that the date of arrival of the Wilson's Thrush is given as from April 20 to April 25th, nine days earlier than the date given in Chapman's 'Handbook' for Sing-Sing, N. Y., and that the Hermit Thrush does not appear in the list, it seems surprising that the list should have been printed without the least editorial comment.

"We would respectfully suggest that no record of a bird *merely observed* where there is any chance error, be accepted, unless the observer be well known to the editor, or to some orni-

thologist of standing and judgment, who will vouch to the editor for the accuracy of the observer."

Doubtless such mistakes would not be made with the bird in the hand. Furthermore, classification without specimens would be impossible, and classification is by no means perfect yet. But to attempt to classify according to the external characteristics which could be differentiated, by the field glass would be folly indeed. Conditions of moult, etc., would be undeterminable without the specimen in hand, and subspecies would be unknown. (This last would not be so great an omission as might at first seem.) Nidification however can not be studied by aid of the shotgun. The little habits which make the birds so interesting, can not be observed from a dried skin. A specimen, never mind how well prepared, can not give forth those glorious notes of melody which greet us in our travels afield, nor can a set of "scientifically prepared" eggs furnish the thousand and one interesting antics of the nestings.

Arguments like these can be produced "*ad infinitum*" by advocates of both "methods" but the matter will ever remain in *statu quo*, for the collector will collect, the opera glass man will "rubber," and the camera man will develop (both his negative and his knowledge) and each will have his separate field of usefulness and will produce his separate results, and these will be taken as in every other field of research, to produce the perfect whole for which we are all laboring. The real thing needed in reform is that there should be a discrimination between the working naturalist and the fadist. An opera glass fadist in nature is bad. A camera fadist in nature is worse; but a shot-gun fadist in nature is the extreme limit of uselessness and cruelty. Let us then discriminate and be charitable.

C. C. PURDUM, M. D.

A Large Set of the Chickadee.

May 14, 1899, while on a ramble through fields, woods and swamps, I came to a small swamp and found a nest cavity of the Chickadee four feet up in a rotten maple stub. I put a small stick in the cavity and struck something soft in the bottom and decided it was the soft lining of the nest, so I left it and returned a week later, the 21st, and opened the cavity. The bird was on the nest and when she left the nest, I saw the finest set of the Chickadee any collector ever saw; a beautiful set of *ten* eggs, incubation begun. Nest was composed of moss, hair and down of the cat-tail. I have collected other sets of this species just as nice as far as markings are concerned, but the number in this set makes it very valuable.

LISPENARD S. HORTON,
Poughkeepsie, N. N.

Is Albinism Hereditary?

I have often wondered if Albinism is hereditary in birds, and am inclined to believe it is; basing my belief on the fact that last spring (1902) an almost pure white Robin (*Merula migiatoria*) appeared in Elmwood, a local cemetery. I did not find its nest but after the breeding season three more Albinos developed all of which were young-of-year. Now the question is are these all the young of the individual first referred to? If so Albinism is hereditary. But how is it Albinos do not become more common from year to year? My theory is that these individuals are always in demand by collectors and so are kept down in number.

A. W. BLAIN, JR.,
Detroit, Mich.

A Large Set of Red-Tails.

I suppose I shall be branded as a fraud by some collectors when I say I took a set of five Red-tailed Hawk this

last season. I can find no incident or authority where more than four were previously recorded. I have taken the eggs of this same pair of birds for the past three seasons and never took over three.

The set of five were far advanced in incubation, but with the help and patience of our old Oological friend, Mr. H. C. Higgins, of Cincinnati, N. Y., managed to save them with rather large holes. They are marked very lightly but are as large as any eggs of this species that I have ever seen.

W. K. HATLER, Cortland, N. Y.

Chimney Swifts.

In the OÖLOGIST, March, 1900, page 44, appeared a short note on the unusual nesting of the Chimney Swift. For the past five summers this pair of Swifts have built their nests and reared their young in this same building, a new nest being built each year, but only a short distance from the one of the preceding year. The nests being built on the perpendicular wall inside a carriage house. The birds going to and from the nest through a small ventilator in the side of the building; that it was the same pair of birds I am of course not positive, but I think there can be but little doubt.

GUY H. BRIGGS,
Livermore, Me.

Twice Used Nests.

I have never observed any notes in regard to the American Robin using their nests more than one season, but this past season I found two nests containing eggs that were built in 1901. Each nest contained a full set of eggs and the parent bird was setting on them. The nests were not relined and contained no lining of any kind; the eggs were laid on the bare mud bottom, and the nests were much the worse for wear, having withstood the storms of a

Maine winter. One was built in a small pine in woods, the other in a maple tree beside a traveled road.

GUY H. BRIGGS.
Livermore, Me.

The Appearance of the Evening Grosbeak in Western Ontario in the Winter of 1901-1902.

There is plenty of interest in the woods even in winter when bird life is at its minimum, and there is ever that delightful uncertainty as to what the next turn may reveal. Thus it was, when one day in January, (the 28th) as I was nearing home, a flock of Kinglets attracted my attention to a little clump of balsams, where they were enjoying themselves in their usual careless and merry fashion. I was thinking merely of the Kinglets, for they were the only bird subjects on hand at the time, though good ones withal, when a movement in the bushes, caused by a larger, heavier bird, made me forget the Golden-crowns. "A Pine Grosbeak" was my first thought; but no—a moment later up hopped a splendid bird in black and gold and I was introduced to the Evening Grosbeak, an entirely new and entirely welcome visitor from the land of the broad plains and setting sun.

Scarcely six feet away, he gazed curiously at me, his big, yellow bill almost hiding his head, then, satisfied with his inspection, he nipped off a bud, and in true Grosbeak fashion, paid no more attention to me. Soon a dull colored one, probably a female, appeared and the two went quietly on with their supper, entirely unmindful of my presence. It was late in the afternoon and these two rare and beautiful strangers among the Canadian evergreens looked to me like two intercepted rays of level light from the declining sun. Ever and anon they seemed to speak to each other in low whispering voices, indescribably

sweet, and these were the only sounds I heard. I watched them till they went away and then I wrote a name in my note book that had never been there before.

I have said thus much about my first meeting with this western wanderer, for it is the first meeting with a rare bird that the ornithologist loves best. However this meeting was not destined to be my last. The next day, on going to the college, Prof. Doherty reported having seen a flock of about fifty feeding on a weed patch in a pasture. He described their manner of feeding to me but I shall come to that later on

On the 12th of February two more were noted and the next day three were seen. I shot one of these and watched another, a fine, bright male who, all by himself, was making a meal off the fruits of a Manitoba maple. I did not see them again till the 27th of February when my attention was attracted by hearing the low flow of Grosbeak language from the top of a little balsam and there were two birds, both dull-colored this time.

Yet again I saw this bird in black and gold. On March 10th I startled a Screech Owl from his perch over our front door and a moment later, while I was yet watching the fast retreating owl, I heard the clear whistle, the Grosbeak's call, in a maple grove to the left. The desire for specimens came on me and when I went to look for the authors of the notes I had my gun in my hands. I got them both in line but only one fell; the other flew to a nearby tree and dropped at the report of the second barrel. There are three Grosbeak skins in my collection but they look different from those splendid birds that whistled in the morning air from the top of the maple in the grove. Still I am glad they are there.

In this paper I have tried merely to give an account of my experience with

this bird, and not to give a regular account of its habits, but before I close I must put down a few little points which I observed in regard to its notes and its feeding habits. For its habits when in flocks I have to rely on Prof. Doherty's description as I did not notice a single flock.

The flock which he observed consisted of about fifty birds and they were feeding among thistles, ragweed, pigweed and various other weeds which frequent waste land. They continually moved onwards with a sort of leap-frog motion, those behind flying on ahead of those in front and then alighting to feed. This motion was repeated again and again as the seeds were exhausted. All this time, (and I noticed this myself in connection with the birds I saw feeding,) there was a continuous flow of conversation, each bird talking softly to itself in a low, sweet voice as though its mind were far away. They have another note however, a loud, clear whistle like the Pine Grosbeaks. This is one of their call notes and is usually uttered when the bird is perched high upon a tree.

In regard to food the stomachs of the three birds I shot contained only a green mass of vegetable material, probably buds or the fruits of the maple, in fact one bird was feeding on the latter when shot and another was watched feeding on the fruits of the Manitoba maple.

In quietness and trust of people these birds almost outdo the Pine Grosbeak for they never showed the slightest sign of fear, in fact I stood so close to one that I could have touched it easily with my hand. However, the Evening Grosbeaks are gone now and I suppose it will be some time before I see them again, but they helped to brighten one winter for me and for that I'm thankful.

F. NORMAN BEATTIE,
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